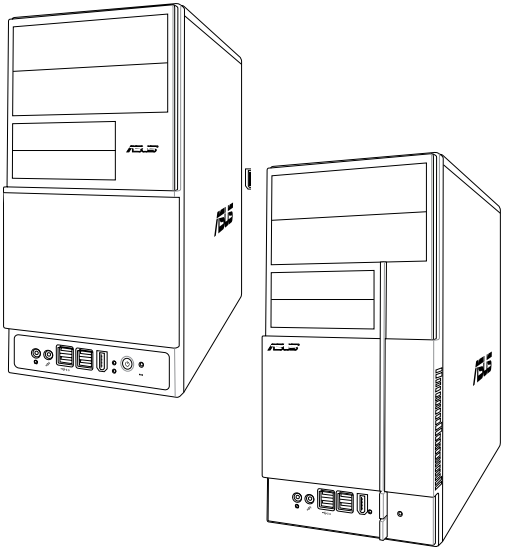
V-Series P5G33

ASUS PC (Desktop Barebone)

Installation Manual



E3245

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Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing devices into the system, carefully read all the documentation that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet. Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.

Lithium-Ion Battery Warning

CAUTION: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

VORSICHT: Explosionsgetahr bei unsachgemäßen Austausch der Batterie. Ersatz nur durch denselben oder einem vom Hersteller empfohlenem ähnljchen Typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

LASER PRODUCT WARNING

CLASS 1 LASER PRODUCT

About this guide

Audience

This guide provides general information and installation instructions about the ASUS Vintage V-Series P5G33 barebone system. This guide is intended for experienced users and integrators with hardware knowledge of personal computers.

How this guide is organized

This guide contains the following parts:

1. **Chapter 1: System introduction**
   This chapter gives a general description of the ASUS V-Series P5G33. The chapter lists the system features, including introduction on the front and rear panel, and internal components.
2. **Chapter 2: Basic installation**
   This chapter provides step-by-step instructions on how to install components in the system.
3. **Chapter 3: Starting up**
   This chapter helps you power up the system and install drivers and utilities from the support CD.
4. **Chapter 4: Motherboard information**
   This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.
5. **Chapter 5: BIOS information**
   This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.

Conventions used in this guide

WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to aid in completing a task.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS Websites**

   The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to the ASUS contact information.

2. **Optional Documentation**

   Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

System package contents

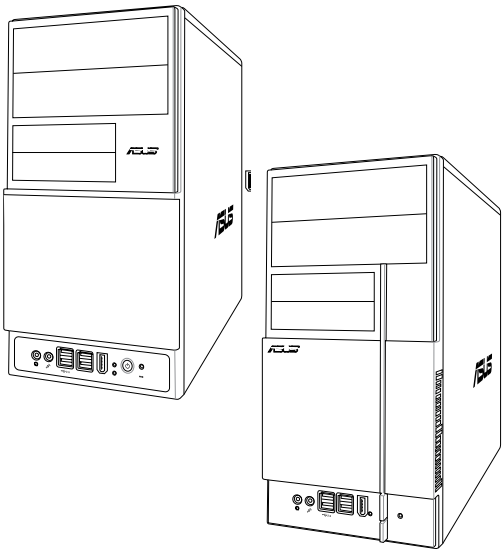
Check your V-Series P5G33 system package for the following items.

If any of the items is damaged or missing, contact your retailer immediately.

Item description
1. **ASUS V-Series P5G33 barebone system** with
• ASUS motherboard
• Power supply unit
• ASUS chassis
2. **Cable**
• AC power cable
3. **Support CD**
4. **User guide**
5. **Telecom Adapter Card (Optional)**

Chapter 1

This chapter gives a general description of the ASUS V-Series P5G33. The chapter lists the system features including introduction on the front and rear panel, and internal components.



System introduction

1.1 Welcome!

Thank you for choosing the ASUS V-Series P5G33!

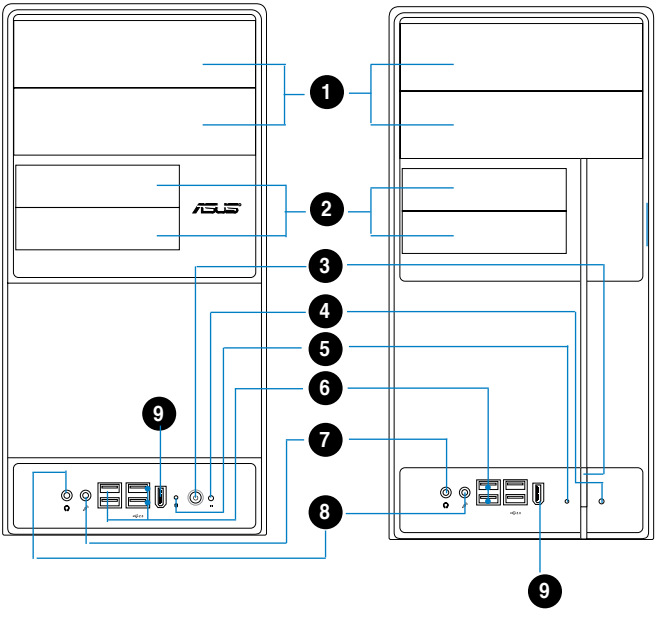
The ASUS V-Series P5G33 is an all-in-one barebone system with a versatile home entertainment feature.

The system comes in a stylish casing and powered by the ASUS motherboard that supports the Intel® Core™2 Extreme / Core™2 Duo / Pentium® D / Pentium® 4 / Celeron® D processors in the 775-land package.

The system supports up to 4 GB of system memory using DDR2-800/667 DIMMs. High-resolution graphics via integrated graphics controller or PCI Express x16 slot, Serial ATA, USB 2.0, and 6-channel audio feature the system and take you ahead in the world of power computing.

1.2 Front panel

The front panel includes the optical drive bays, floppy disk drive slot, power button, and several I/O ports are located at the front panel.

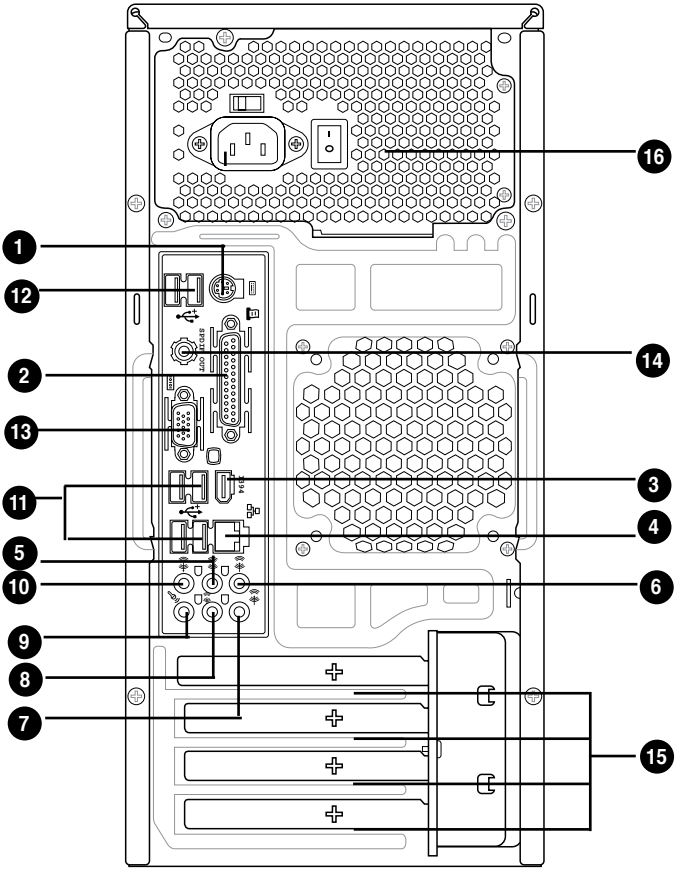


1. **Two empty 5.25-inch bays.** These bays are for IDE optical drives.
2. **3.5-inch drive bays.** These slots are for 3.5-inch floppy or hard disk drives.
3. **Power button.** Press this button to turn the system on.
4. **Reset button.** Press this button to reboot the system without turning off the power.
5. **HDD LED.** This LED lights up when data is read from or written to the hard disk drive.
6. **USB 2.0 ports.** These Universal Serial Bus 2.0 (USB 2.0) ports are available for connecting USB 2.0 devices such as a mouse, printer, scanner, camera, PDA, and others.
7. **Headphone port.** This Line In (green) port connects a headphone with a stereo mini-plug.
8. **Microphone port.** This Mic (pink) port connects a microphone.
9. **IEEE1394 port.**

This V-series provide V2/V3 two types of front panel for users to choose, please refer to your product package for the front panel type you purchased.

1.3 Rear panel

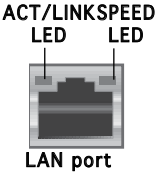
The system rear panel includes the power connector and several I/O ports that allow convenient connection of devices.



1. PS/2 keyboard port (purple). This port is for a PS/2 keyboard.
2. Parallel port. This 25-pin port connects a parallel printer, a scanner, or other devices.
3. IEEE1394a port. This 6-pin IEEE 1394a port provides high-speed connectivity for audio/video devices, storage peripherals, PCs, or portable devices.
4. LAN (RJ-45) port. Supported by Gigabit LAN controller, this port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.

LAN port LED indications

Activity/Link Speed LED			
Status	Description	Status	Description
OFF	No link	OFF	10 Mbps connection
ORANGE	Linked	ORANGE	100 Mbps connection
BLINKING	Data activity	GREEN	1 Gbps connection



5. Rear Speaker Out port (black). This port connects the rear speakers in a 4-channel, 6-channel, or 8-channel audio configuration.
6. Center/Subwoofer port (orange). This port connects the center/subwoofer speakers.
7. Line In port (light blue). This port connects the tape, CD, DVD player, or other audio sources.
8. Line Out port (lime). This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.
9. Microphone port (pink). This port connects a microphone.
10. Side Speaker Out port (gray). This port connects the side speakers in an 8-channel audio configuration.

Refer to the audio configuration table below for the function of the audio ports in 2, 4, 6, or 8-channel configuration.

Audio 2, 4, 6, or 8-channel configuration

Port	Headset 2-channel	4-channel	6-channel	8-channel
Light Blue	Line In	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In	Mic In
Orange	–	–	Center/Subwoofer	Center/Subwoofer
Black	–	Rear Speaker Out	Rear Speaker Ou	Rear Speaker Out
Gray	–	–	–	Side Speaker Out

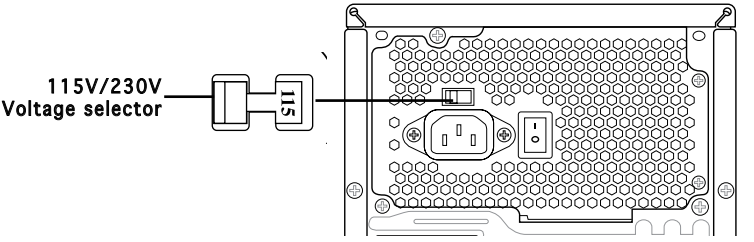
11. USB 2.0 ports. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
12. USB 2.0 ports. These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
13. VGA port. This port is for a VGA monitor or other VGA-compatible devices.
14. Coaxial S/PDIF Out port. This port connects an external audio output device via a coaxial S/PDIF cable.
15. Expansion slot covers. Remove these covers when installing expansion cards.
16. Power supply unit fan vent. This vent is for the PSU fan that provides ventilation inside the power supply unit.

Voltage selector

The PSU has a 115 V/230 V voltage selector switch located beside the power connector. Use this switch to select the appropriate system input voltage according to the voltage supply in your area.

If the voltage supply in your area is 100-127 V, set this switch to 115 V.

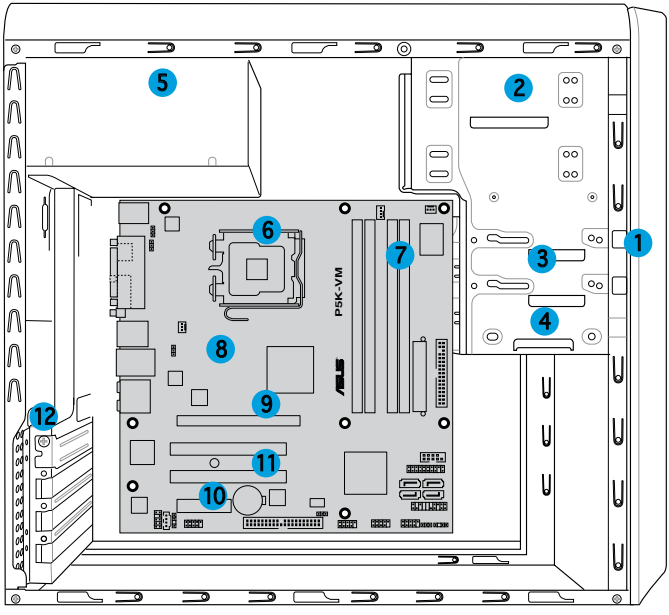
If the voltage supply in your area is 200-240 V, set this switch to 230 V.



Setting the switch to 115V in a 230V environment or 230V in a 115V environment will seriously damage the system!

1.4 Internal components

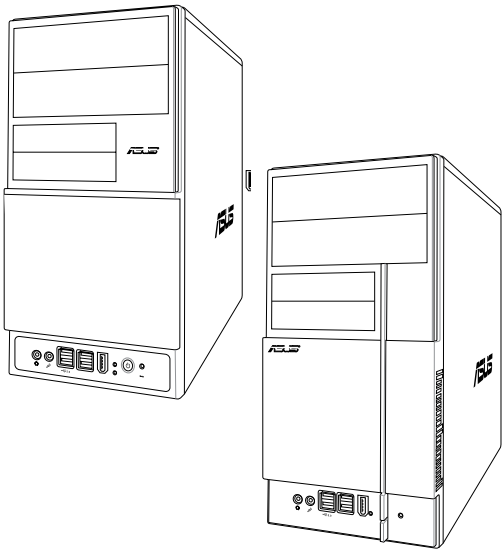
The illustration below is the internal view of the system when you remove the top cover and the power supply unit. The installed components are labeled for your reference. Proceed to Chapter 2 for instructions on installing additional system components.



1. Front panel cover
2. 5.25-inch optical drive bays
3. Floppy disk drive bay
4. Hard disk drive bay
5. Power supply unit
6. CPU socket
7. DIMM sockets
8. ASUS motherboard
9. PCI Express x16 slot
10. PCI Express x1 slot
11. PCI slots
12. Metal bracket lock

Chapter 2

This chapter provides step-by-step instructions on how to install components in the system.



Basic installation

2.1 Preparation

Before you proceed, make sure that you have all the components you plan to install in the system.

Basic components to install

1. Central Processing Unit (CPU)
2. DDR2 Dual Inline Memory Module (DIMM)
3. Expansion card(s)
4. Hard disk drive
5. Optical drive
6. Floppy disk drive

Tool

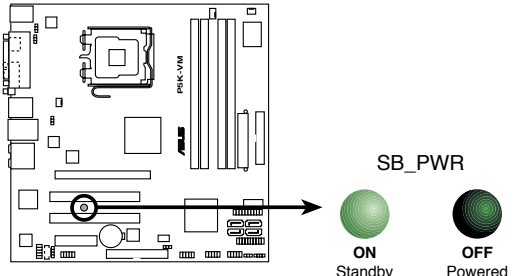
Phillips (cross) screw driver

2.2 Before you proceed

Take note of the following precautions before you install components into the system.

- Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

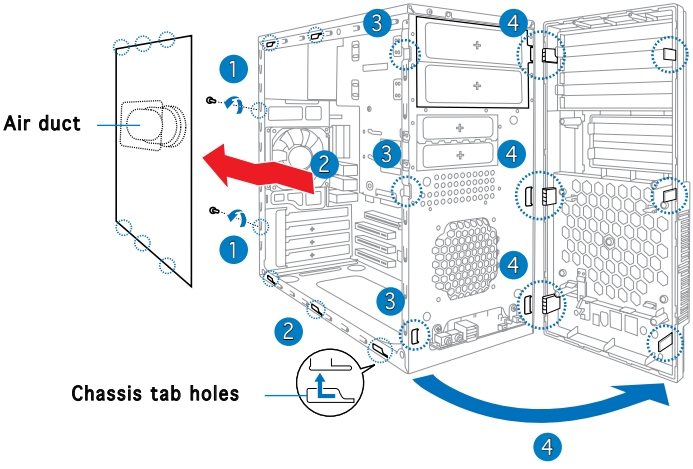
The motherboard comes with an onboard standby power LED. This LED lights up to indicate that the system is ON, in sleep mode or in soft-off mode, and not powered OFF. Unplug the power cable from the power outlet and make sure that the standby power LED is OFF before installing any system component.



P5K-VM Onboard LED

2.3 Removing the side cover and front panel assembly

1. Remove the cover screws on the rear panel.
2. Pull the side cover toward the rear panel until its hooks disengage from the chassis tab holes. Set the side cover aside.
3. Locate the front panel assembly hooks, then lift them until they disengage from the chassis.
4. Swing the front panel assembly to the right, until the hinge-like tabs on the right side of the assembly are exposed.
5. Remove the front panel assembly, then set aside.



2.4 Central Processing Unit (CPU)

2.4.1 Overview

The motherboard comes with a surface mount LGA775 socket designed for the Intel® Core™2 Quad / Intel® Core™2 Extreme / Core™2 Duo / Pentium® Extreme / Pentium® D/ Pentium® 4 processors.

- Make sure that all power cables are unplugged before installing the CPU.
- Connect the chassis fan cable to the CHA_FAN1 connector to ensure system stability.

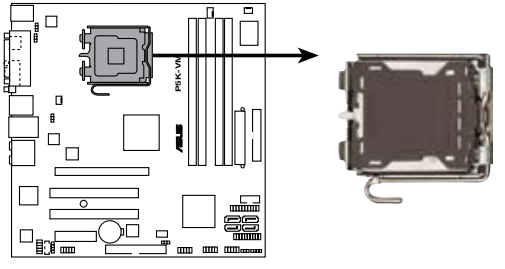
- Upon purchase of the motherboard, make sure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/ transit-related.
- Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the LGA775 socket.
- The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.

2.4.2 Installing CPU

To install a CPU:

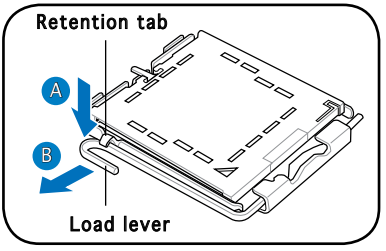
1. Locate the CPU socket on the motherboard.

Before installing the CPU, make sure that the socket box is facing towards you and the load lever is on your left.



P5K-VM CPU Socket 775

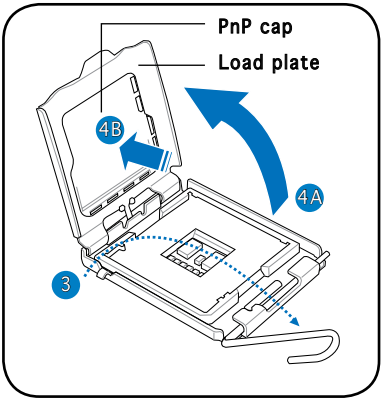
2. Press the load lever with your thumb (A), then move it to the left (B) until it is released from the retention tab.



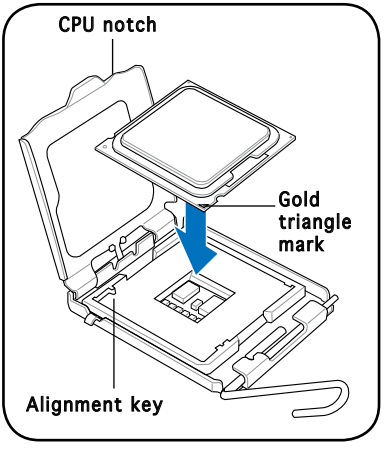
To prevent damage to the socket pins, do not remove the PnP cap unless you are installing a CPU.

3. Lift the load lever in the direction of the arrow to a 135° angle.

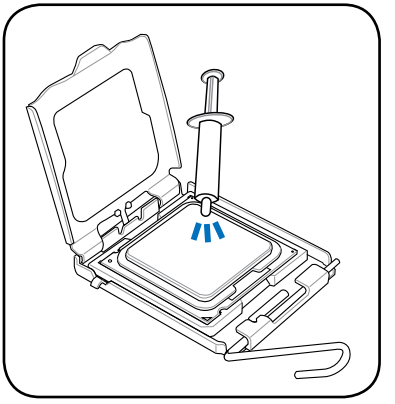
4. Lift the load plate with your thumb and forefinger to a 100° angle (4A), then push the PnP cap from the load plate window to remove (4B).



5. Position the CPU over the socket, making sure that the gold triangle is on the bottom-left corner of the socket then fit the socket alignment key into the CPU notch.

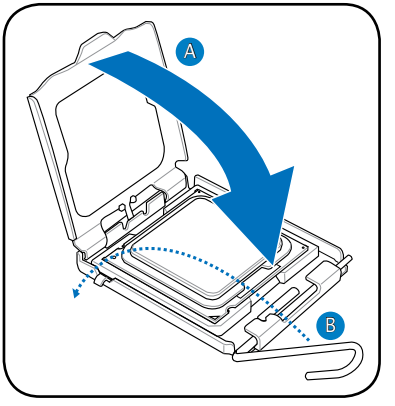


6. Apply Thermal Interface Material on the CPU before closing the load plate.



DO NOT eat the Thermal Interface Material. If it gets into your eyes or touches your skin, make sure to wash it off immediately, and seek professional medical help.

7. Close the load plate (A), then push the load lever (B) until it snaps into the retention tab.



2.4.3 Installing the CPU fan and heatsink assembly

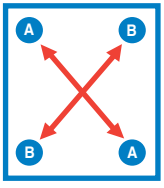
The Intel® Pentium® 4 LGA775 processor requires a specially designed heatsink and fan assembly to ensure optimum thermal condition and performance.

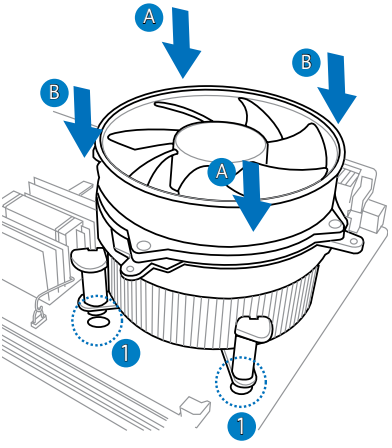
- When you buy a boxed Intel® Pentium® 4 processor, the package includes the CPU fan and heatsink assembly. If you buy a CPU separately, make sure that you use only Intel®-certified multi-directional heatsink and fan.
- Your Intel® Pentium® 4 LGA775 heatsink and fan assembly comes in a push-pin design and requires no tool to install.

If you purchased a separate CPU heatsink and fan assembly, make sure that the Thermal Interface Material is properly applied to the CPU heatsink or CPU before you install the heatsink and fan assembly.

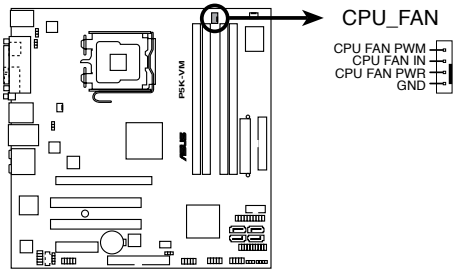
To install the CPU heatsink and fan:

1. Place the heatsink on top of the installed CPU, making sure that the four fasteners match the holes on the motherboard.
2. Push down two fasteners at a time in a diagonal sequence to secure the heatsink and fan assembly in place.





3. When the fan and heatsink assembly is in place, connect the CPU fan cable to the connector on the motherboard.



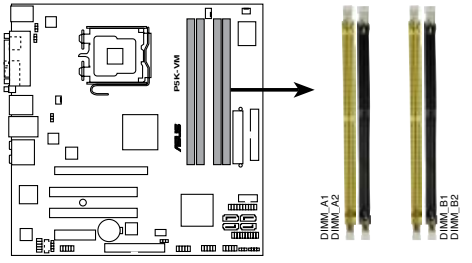
P5K-VM CPU fan connector

Do not forget to connect the CPU fan connector! Hardware monitoring errors can occur if you fail to plug this connector.

2.5 Installing a DIMM

The motherboard comes with four Double Data Rate 2 (DDR2) Dual Inline Memory Modules (DIMM) sockets.

The figure illustrates the location of the DDR2 DIMM sockets:



P5K-VM 240-pin DDR2 DIMM sockets

Channel	Sockets
Channel A	DIMM_A1 and DIMM_A2
Channel B	DIMM_B1 and DIMM_B2

- This chipset officially supports DDR2-800 MHz. With the ASUS Super Memspeed Technology, this motherboard natively supports up to DDR2-1066 MHz. See the table below.

FSB	DDR2
1333	1066*
1333	800
1333	667
1066	1066*
1066	800
1066	667

- *If you install a DDR2-1066 memory module whose SPD is DDR2-800, make sure that you set the DRAM Frequency item in BIOS to [DDR2-1066MHz]. See section 2.4.1 Jumperfree Configuration for details.

2.5.1 Memory configurations

You may install 256 MB, 512 MB, 1 GB, and 2 GB unbuffered non-ECC DDR2 DIMMs into the DIMM sockets.

Recommended Memory Configurations

Mode	Sockets			
	DIMM_A1	DIMM_B1	DIMM_A2	DIMM_B2
Single-Channel	-	Populated	-	-
	Populated	-	-	-
Dual-channel (1)	Populated	Populated	-	-
Dual-channel (2)	Populated	Populated	Populated	Populated

- You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.
- Always install DIMMs with the same CAS latency. For optimum compatibility, it is recommended that you obtain memory modules from the same vendor.
- If you install four 1 GB memory modules, the system may only recognize less than 3GB because the address space is reserved for other critical functions. This limitation appears on Windows® XP/Vista 32-bit operation system which does not support Physical Address Extension (PAE).
- If you install Windows® XP/Vista 32-bit operation system, a total memory of less than 3GB is recommended.
- This motherboard does not support memory modules made up of 128 Mb chips.

Notes on memory limitations

- Due to chipset limitation, this motherboard can only support up to 8 GB on the operating systems listed below. You may install a maximum of 2 GB DIMMs on each slot.

64-bit
Windows® XP Professional x64 Edition
Windows® Vista x64 Edition

- Some old-version DDR2-800/667 DIMMs may not match Intel®'s On-Die-Termination (ODT) requirement and will automatically downgrade to run at DDR2-533. If this happens, contact your memory vendor to check the ODT value.

- Due to chipset limitation, DDR2-800 with CL=4 will be downgraded to run at DDR2-667 by default setting. If you want to operate with lower latency, adjust the memory timing manually.
- Due to chipset limitation, DDR2-667 with CL=3 will be downgraded to run at DDR2-533 by default setting. If you want to operate with lower latency, adjust the memory timing manually.

P5K-VM Motherboard Qualified Vendors Lists (QVL) DDR2-1066 MHz capability

Size	Vendor	SS/ DS	Part No.	DIMM support		
				A*	B*	C*
2048MB	OCZ	SS	OCZ2FX11502GK / PC2 9200 /1G Dual CH /FlexXLC	•	•	•
1024MB	OCZ	DS	OCZ2P10002GK / PC2 8000 / 1G EL Dual CH / Gold XTC	•	•	•
1024MB	OCZ	DS	OCZ2N11001G	•	•	•
1024MB	CORSAIR	SS	CM2X1024-8500	•	•	•
1024MB	Crucial	DS	BL12864AA1005.16FD / CL111R9MX-65182	•	•	•
512MB	Crucial	SS	BL646AA1005.8FD / CL111R5W6-65183	•	•	
2048MB	Kingston	DS	KHX8500D2K2/2GN 9905316-061.A00LF K2 2.2V	•	•	•
1024MB	Kingston	DS	KHX8500D2K2/1GN 9905315-061.A00LF K2 2.2V	•	•	•
1024MB	Kingston	DS	KHX9200D2 / 1G / 9905315-064.A00LF / 2.3-2.35v	•	•	•
1024MB	Kingston	DS	KHX9600D2 / 1G / 9905316-069.A00LF / 2.3-2.35v	•	•	•
512MB	Kingston	SS	KHX9200D2 / 512 9905315-054.A00LF / 2.3-2.35v	•	•	

If you install a DDR2-1066 memory module whose SPD is DDR2-800, make sure that you set the DRAM Frequency item in BIOS to [DDR2-1066MHz]. See section 2.4.1 Jumperfree Configuration for details.

- A*: Supports one module inserted in any slot as Single-channel memory configuration.
- B*: Supports one pair of modules inserted into either the yellow slots or the black slots as one pair of Dual-channel memory configuration.
- C*: Supports 4 modules inserted into both the yellow and black slots as two pairs of Dual-channel memory configuration.

Visit the ASUS website for the latest DDR2-1066/800/667MHz QVL.

P5K-VM Motherboard Qualified Vendors Lists (QVL)
DDR2-800 MHz capability

Size	Vendor	Chip No.	SS/ DS	Part No.	DIMM support		
					A*	B*	C*
512MB	KINGSTON	K4T51083QC	SS	KVR800D2N5/512	•	•	•
1024MB	KINGSTON	Heat-Sink Package	SS	KHX6400D2LLK2/1GN			•
1024MB	KINGSTON	V59C1512804QBF25	DS	KVR800D2N5/1G	•	•	•
256MB	Qimonda	HYB18T512160BF-25F	SS	HYS64T32000HU-25F-B			•
512MB	Qimonda	HYB18T512800BF25F	SS	HYS64T64000HU-25F-B			•
1024MB	Qimonda	HYB18T512800BF25F	DS	HYS64T128020HU-25F-B			•
512MB	SAMSUNG	EDD339XX	SS	M378T6553CZ3-CE7	•	•	
256MB	SAMSUNG	K4T51163QC-ZCE7	SS	M378T3354CZ3-CE7	•	•	•
512MB	SAMSUNG	ZCE7K4T51083QC	SS	M378T6553CZ3-CE7	•	•	•
1024MB	SAMSUNG	ZCE7K4T51083QC	DS	M378T2953CZ3-CE7	•	•	
512MB	Hynix	HY5PS12821CFP-S5	SS	HYMP564U64CP8-S5	•		•
1024MB	Hynix	HY5PS12821CFP-S5	DS	HYMP512U64CP8-S5	•	•	
512MB	MICRON	D9GKX	SS	MT8HTF6464AY-80ED4	•	•	•
1024MB	MICRON	D9GKX	DS	MT16HTF12864AY-80ED4	•	•	•
512MB	CORSAIR	Heat-Sink Package	SS	CM2X512A-6400	•	•	
1024MB	CORSAIR	Heat-Sink Package	DS	CM2X1024-6400C4	•	•	•
1024MB	ELPIDA	E1108AB-8E-E(ECC)	SS	EBE10EE8ABFA-8E-E	•	•	
2048MB	ELPIDA	E1108AB-8E-E(ECC)	DS	EBE21EE8ABFA-8E-E	•	•	
512MB	Crucial	Heat-Sink Package	SS	BL6464AA804.8FD	•	•	•
512MB	Crucial	Heat-Sink Package	SS	BL6464AA804.8FD3	•	•	
1024MB	Crucial	Heat-Sink Package	DS	BL12864AA804.16FD	•	•	•
1024MB	Crucial	Heat-Sink Package	DS	BL12864AL804.16FD3	•	•	•
1024MB	Crucial	Heat-Sink Package	DS	BL12864AA804.16FD3			•
512MB	Apacer	Heat-Sink Package	DS	AHU512E800C5K1C	•	•	•
1024MB	Apacer	Heat-Sink Package	DS	AHU01GE800C5K1C			•
512MB	A-DATA	AD29608A8A-25EG	SS	M2OAD6G3H3160G1E53	•	•	
1024MB	A-DATA	AD26908A8A-25EG	DS	M2OAD6G3I4170I1E58	•	•	•
512MB	KINGMAX	KKA8FEIBF-HJK-25A	SS	KLDC28F-A8KI5	•	•	•
1024MB	KINGMAX	KKA8FEIBF-HJK-25A	DS	KLDD48F-A8KI5	•	•	•
512MB	Transcend	HY5PS12821CFP-S5	SS	TS64MLQ64V8J			•
1024MB	Transcend	HY5PS12821CFP-S5	DS	TS128MLQ64V8J	•	•	•
512MB	Super Talent	Heat-Sink Package	SS	T800UA12C4	•	•	•
1024MB	Super Talent	Heat-Sink Package	DS	T800UB1GC4			•
1024MB	NANYA	NT5TU64M8BE-25C	DS	NT1GT64U8HB0BY-25C			•
512MB	PSC	A3R12E3HEF641B9A05	SS	AL6E8E63B8E1K			•
1024MB	PSC	A3R12E3HEF641B9A05	DS	AL7E8E63B-8E1K			•

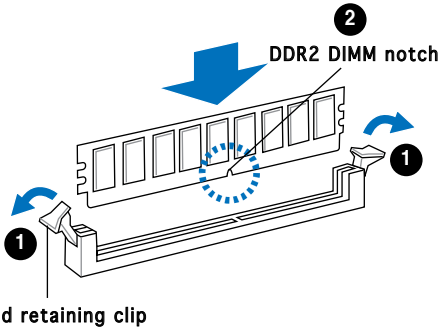
P5K-VM Motherboard Qualified Vendors Lists (QVL)
DDR2-667MHz capability

Size	Vendor	Chip No.	SS/ DS	Part No.	DIMM support		
					A*	B*	C*
512MB	KINGSTON	D6408TEBGGL3U	SS	KVR667D2N5/512	•	•	•
1024MB	KINGSTON	D6408TEBGGL3U	DS	KVR667D2N5/1G	•	•	•
256MB	KINGSTON	HYB18T256800AF3S	SS	KVR667D2N5/256	•	•	•
256MB	KINGSTON	6SBI2D9DCG	SS	KVR667D2N5/256	•		•
2048MB	KINGSTON	E1108AB-6E-E	DS	KVR667D2N5/2G	•	•	•
512MB	Qimonda	HYB18T512800BF3S(ECC)	SS	HYS72T64000HU-3S-B	•	•	
1024MB	Qimonda	HYB18T512800BF3S(ECC)	DS	HYS72T128020HU-3S-B	•	•	
256MB	Qimonda	HYB18T512160BF-3S	SS	HYS64T32000HU-3S-B	•	•	
512MB	Qimonda	HYB18T512800BF3S	SS	HYS64T64000HU-3S-B	•	•	•
1024MB	Qimonda	HYB18T512800BF3S	DS	HYS64T128020HU-3S-B	•	•	•
512MB	SAMSUNG	ZCE6K4T51083QC	SS	M378T6553CZ0-CE6	•	•	
1024MB	SAMSUNG	ZCE6K4T51083QC	DS	M378T2953CZ0-CE6	•	•	
256MB	SAMSUNG	K4T51163QC-ZCE6	SS	M378T3354CZ3-CE6	•	•	•
512MB	SAMSUNG	K4T51083QC	SS	M378T6553CZ3-CE6			•
1024MB	SAMSUNG	ZCE6K4T51083QC	DS	M378T2953CZ3-CE6	•	•	•
256MB	SAMSUNG	K4T51163QE-ZCE6	SS	M378T3354EZ3-CE6	•	•	•
512MB	SAMSUNG	K4T51083QE	DS	M378T6553EZS-CE6	•	•	•
1024MB	SAMSUNG	K4T51083QE	DS	M378T2953EZ3-CE6	•	•	•
256MB	Hynix	HY5PS121621CFP-Y5	SS	HYMP532U64CP6-Y5	•		•
1024MB	Hynix	HY5PS12821CFP-Y5	DS	HYMP512U64CP8-Y5	•	•	•
256MB	CORSAIR	MIII00605	SS	VS256MB667D2		•	•
2048MB	NANYA	NT5TU128M8BJ-3C	DS	NT2GT64U8HB0JY-3C	•	•	•
512MB	NANYA	NT5TU64M8BE-3C	SS	NT512T64U88B0BY-3C	•	•	•
512MB	PSC	A3R12E3GEF637BLC5N	SS	AL6E8E63B-6E1K	•	•	•
1024MB	PSC	A3R12E3GEF637BLC5N	DS	AL7E8E63B-6E1K	•	•	•

2.5.2 Installing a DDR2 DIMM

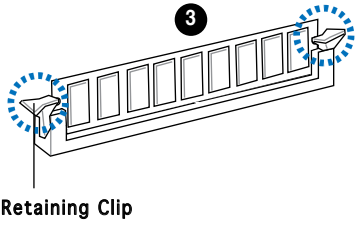
Make sure to unplug the power supply before adding or removing DIMMs or other system components. Failure to do so may cause severe damage to both the motherboard and the components.

1. Unlock a DDR2 DIMM socket by pressing the retaining clips outward.
2. Align a DIMM on the socket such that the notch on the DIMM matches the break on the socket.



A DDR2 DIMM is keyed with a notch so that it fits in only one direction. DO NOT force a DIMM into a socket to avoid damaging the DIMM.

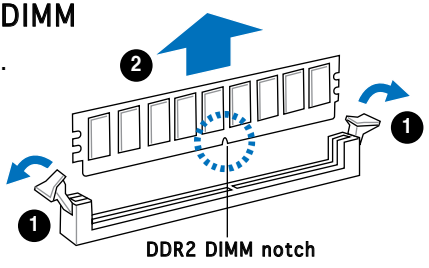
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place and the DIMM is properly seated.



2.5.3 Removing a DDR2 DIMM

Follow these steps to remove a DIMM.

1. Simultaneously press the retaining clips outward to unlock the DIMM.



Support the DIMM lightly with your fingers when pressing the retaining clips. The DIMM might get damaged when it flips out with extra force.

2. Remove the DIMM from the socket.

2.6 Expansion slots

In the future, you may need to install expansion cards. The following sub-sections describe the slots and the expansion cards that they support.

Make sure to unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.

2.6.1 Installing an expansion card

To install an expansion card:

1. Before installing the expansion card, read the documentation that came with it and make the necessary hardware settings for the card.
2. Remove the system unit cover (if your motherboard is already installed in a chassis).
3. Remove the bracket opposite the slot that you intend to use. Keep the screw for later use.
4. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
5. Secure the card to the chassis with the screw you removed earlier.
6. Replace the system cover.

2.6.2 Configuring an expansion card

After installing the expansion card, configure it by adjusting the software settings.

1. Turn on the system and change the necessary BIOS settings, if any. See Chapter 5 for information on BIOS setup.
2. Assign an IRQ to the card. Refer to the tables on the next page.
3. Install the software drivers for the expansion card.

When using PCI cards on shared slots, ensure that the drivers support “Share IRQ” or that the cards do not need IRQ assignments. Otherwise, conflicts will arise between the two PCI groups, making the system unstable and the card inoperable.

Interrupt assignments

IRQ	Priority	Standard function
0	1	System timer
1	2	Keyboard controller
2	–	Re-direct to IRQ#9
3	11	IRQ holder for PCI steering*
4	12	Communications port (COM1)*
5	13	IRQ holder for PCI steering*
6	14	Floppy disk controller
7	15	Printer port (LPT1)*
8	3	System CMOS/Real Time Clock
9	4	IRQ holder for PCI steering*
10	5	IRQ holder for PCI steering*
11	6	IRQ holder for PCI steering*
12	7	PS/2 compatible mouse port*
13	8	Numeric data processor
14	9	Primary IDE channel
15	10	Secondary IDE channel

* These IRQs are usually available for PCI devices.

IRQ assignments for this motherboard

	A	B	C	D	E	F	G	H
PCI slot 1	shared	–	–	–	–	–	–	–
PCI slot 2	–	shared	–	–	–	–	–	–
LAN (Marvell8056)	–	shared	–	–	–	–	–	–
PATA (368)	shared	–	–	–	–	–	–	–
PCIE x16_1	shared	–	–	–	–	–	–	–
PCIE x4	shared	–	–	–	–	–	–	–
USB controller 0	–	–	–	–	–	–	–	shared
USB controller 1	–	–	–	shared	–	–	–	–
USB controller 2	–	–	shared	–	–	–	–	–
USB controller 3	shared	–	–	–	–	–	–	–
USB controller 4	shared	–	–	–	–	–	–	–
USB controller 5	–	–	–	–	–	shared	–	–
USB 2.0 controller 1	–	–	–	–	–	–	–	shared
USB 2.0 controller 2	–	–	shared	–	–	–	–	–
SATA controller 1	–	–	shared	–	–	–	–	–
SATA controller 2	–	–	–	–	–	–	shared	–
VIA 1394	–	–	–	–	shared	–	–	–

2.6.3 PCI slots

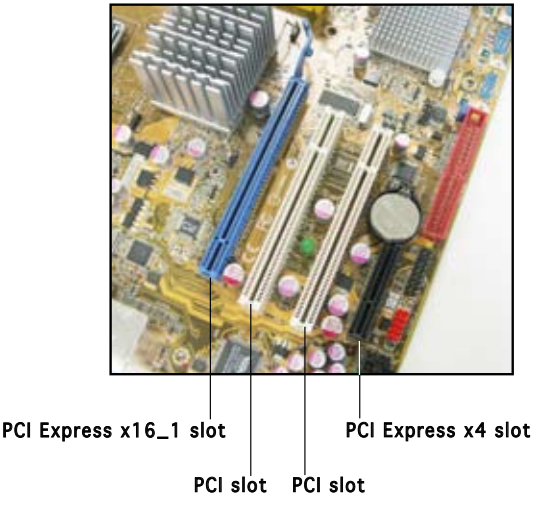
The PCI slots support cards such as a LAN card, SCSI card, USB card, and other cards that comply with PCI specifications. Refer to the figure below for the location of the slots.

2.6.4 PCI Express x4 slot

This motherboard supports PCI Express x4 network cards, SCSI cards and other cards that comply with the PCI Express specifications. Refer to the figure below for the location of the slot.

2.6.5 PCI Express x16 slot

This motherboard has one PCI Express x16 slot that supports a PCI Express x16 graphics card complying with the PCI Express specifications. Refer to the figure below for the location of the slot.



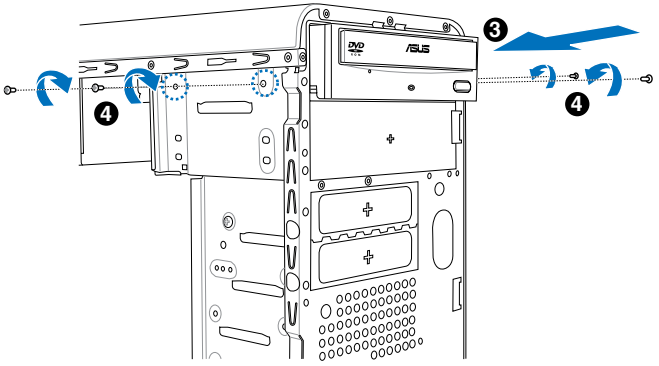
- In default BIOS settings, the internal graphics mode is enabled. When so, the PCI Express x16 (blue) slot supports ADD2 cards only. Install any other PCI Express device to the PCI Express x4 slot.
- If you intend to install a PCI Express graphics card, you must set the Internal Graphics Mode Select item in BIOS to [Disabled]. See section 2.4.4 Chipset for details. The PCI Express x16 slot supports PCIE x16 graphics cards only. You may not install x8, x4, or x1 cards to this slot.

2.7 Installing an optical drive

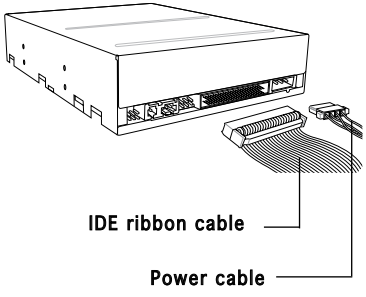
Refer to the instructions in this section if you wish to install a new optical drive.

Follow these steps to install an optical drive:

1. Place the chassis upright.
2. Remove the drive slot metal plate cover.
3. Insert the optical drive into the upper 5.25-inch drive bay and carefully push the optical drive into the bay until its screw holes align with the holes on the bay as shown.
4. Secure the optical drive with two screws on both sides of the bay.



5. Connect a power cable from the power supply to the power connector at the back of the optical drive.
6. Connect one end of the IDE ribbon cable to the IDE interface at the back of the optical drive, matching the red stripe on the cable with Pin 1 on the IDE interface.

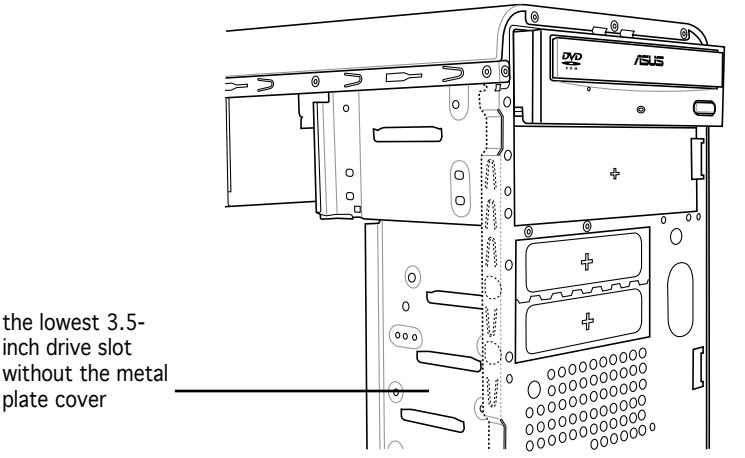


7. Connect the other end of the IDE ribbon cable to the secondary IDE connector (labeled SEC_IDE) on the motherboard. See page 4-7 for the location of this connector.
8. Remove the dummy drive slot cover from the front panel.
9. Replace the front panel.

2.8 Installing a hard disk drive

To install a Serial ATA hard disk drive:

1. Carefully place the hard disk into the the lowest 3.5-inch drive slot (without the metal plate cover).
2. Fasten the screws to secure the hard disk to the drive slot.



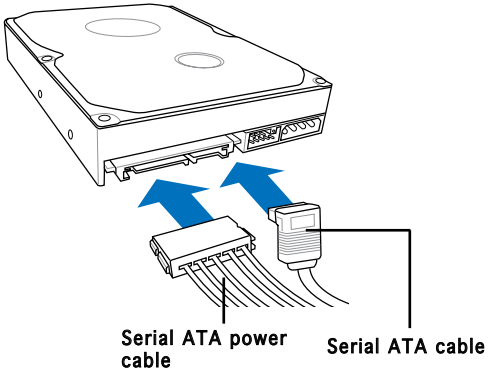
If you do not need to install the optional card reader into your system, you can install the HDD in the one of the 3.5-inch external bay (with the metal plate cover).

3. Connect one end of the Serial ATA cable to the SATA connector at the back of the drive, then connect the other end to a Serial ATA connector on the motherboard. See page 4-6 for the location of the Serial ATA connectors.

4. Connect a 15-pin Serial ATA power plug from the power supply unit to the 15-pin power connector at the back of the drive.

- OR -

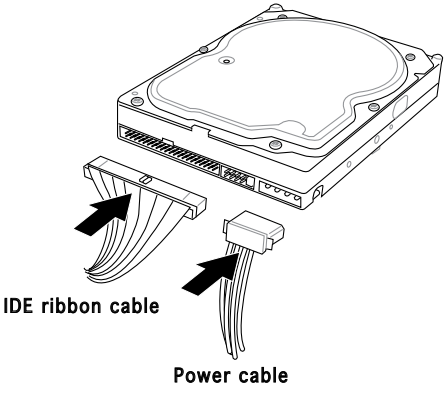
Connect a 4-pin (female) power plug from the power supply unit to the 4-pin (male) power connector at the back of the drive.



If your Serial ATA HDD has both 4-pin and 15-pin connectors at the back, use either the 15-pin SATA power adapter plug **OR** the legacy 4-pin power connector. **DO NOT** use both to prevent damage to components and to keep the system from becoming unstable.

To install an IDE hard disk drive:

1. Follow steps 1-2 of the previous section.
2. Connect the blue interface of the IDE ribbon cable to the primary IDE connector (blue connector labeled PRI_IDE) on the motherboard. See page 4-7 for the location of the connector.



- If you will install only one hard disk drive, make sure to configure your hard disk drive as Master device before connecting the IDE cable and power plug. Refer to the HDD documentation on how to set the drive as a Master device.
- If you will install two IDE hard disk drives, configure the other device as Slave.

3. Connect the gray interface of the IDE ribbon cable to the IDE connector on the drive.
4. If you install two IDE hard disk drives, connect the black interface of the IDE ribbon cable to the IDE connector on the second (Slave) IDE hard disk drive.
5. Connect a 4-pin power plug from the power supply unit to the power connector at the back of the drive(s).

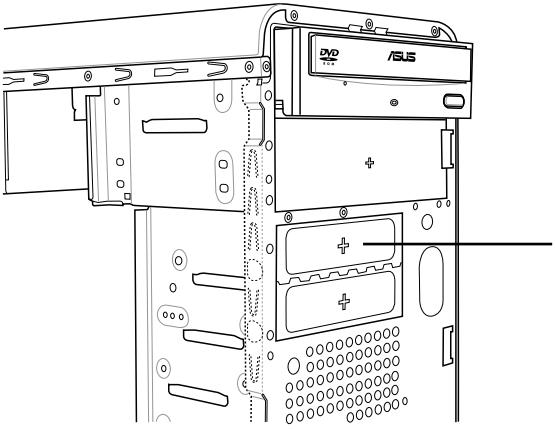
2.9 Installing the card reader

An optional card reader module (see the figure below) is available with the system. If you want to install the card reader into your system, follow the steps on the next page.

Note: the card reader is optional and users need to purchase separately.

To install the card reader module:

1. Remove the drive slot metal plate cover.
2. Carefully insert the card reader module into the 3.5-inch bay until the screw holes align with the holes on the bay.
3. Secure the card reader module with two screws on both sides.



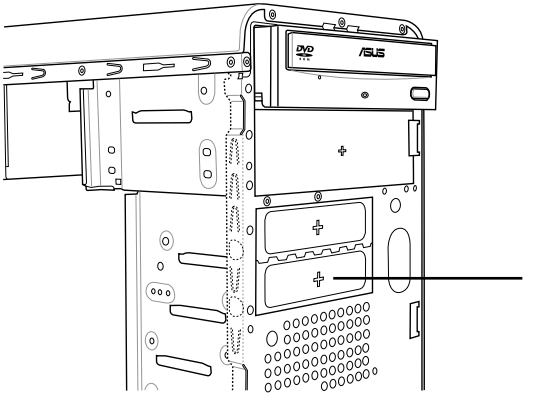
4. Connect the USB cable of the card reader to the USB connector on the motherboard.

2.10 Installing a floppy disk drive

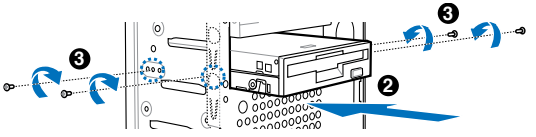
The system comes with one 3.25-inch drive bay for a floppy disk drive.

To install a floppy disk drive:

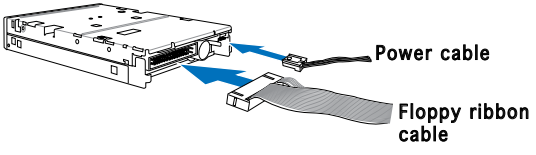
1. Remove the drive slot metal plate cover.



2. Carefully insert the floppy disk drive into the floppy drive bay until the screw holes align with the holes on the bay.
3. Secure the floppy disk drive with two screws on both sides.



4. Connect the floppy disk drive signal cable to the signal connector at the back of the drive.

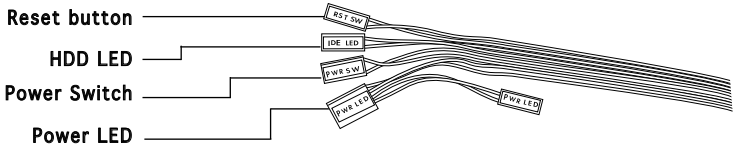


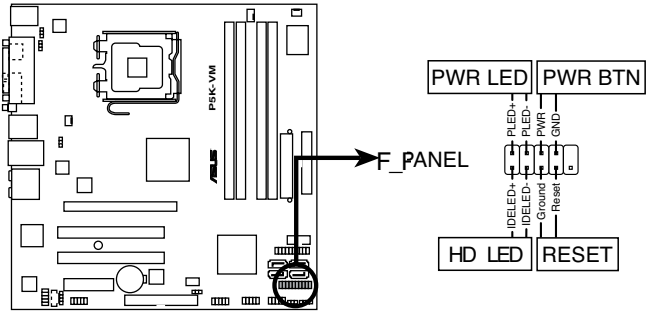
5. Connect the other end of the signal cable to the floppy disk drive connector on the motherboard. See page 4-6 for the location of the floppy disk drive connector.
6. Connect a 4-pin power cable from the power supply unit to the power connector at the back of the floppy disk drive.

2.11 Re-connecting cables

You may have disconnected some cables when you were installing components. You must re-connect these cables before you replace the chassis cover.

LED cables





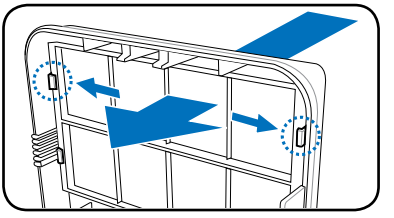
P5K-VM System panel connector

Connect the **reset button**, **power switch**, **power LED**, and **HDD LED** cables to their respective leads in the system panel connector on the motherboard.

2.12 Reinstalling the cover

If you installed an optical and/or floppy disk drive, remove the bay cover(s) on the front panel assembly before reinstalling it to the chassis. To do this:

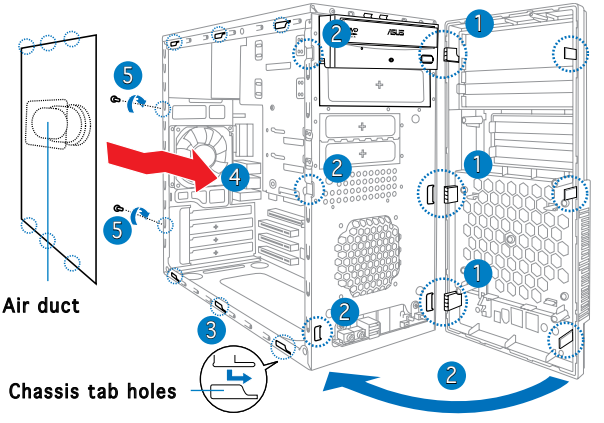
1. Locate the bay cover locks.
2. Press the locks outward to release the bay cover.
3. Push the bay cover inward, then set it aside.
4. Follow the same instructions to remove the 3.5” drive bay cover.



To reinstall the front panel assembly and side cover:

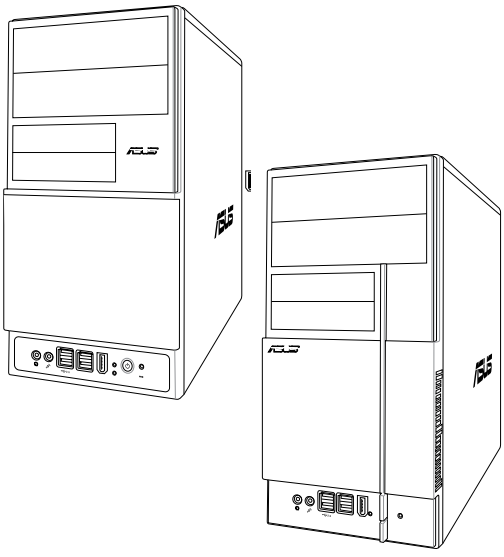
1. Insert the front panel assembly hinge-like tabs to the holes on the right side of the chassis.
2. Swing the front panel assembly to the left, then insert the hooks to the chassis until the front panel assembly fits in place.
3. Insert the six side cover hooks into the chassis tab holes .
4. Push the side cover to the direction of the front panel until it fits in place.
5. Secure the cover with two screws you removed earlier.

If the air duct interferes with the CPU fan, adjust the air duct accordingly.



Chapter 3

This chapter helps you power up the system and install drivers and utilities from the support CD.



Starting up

3.1 Installing an operating system

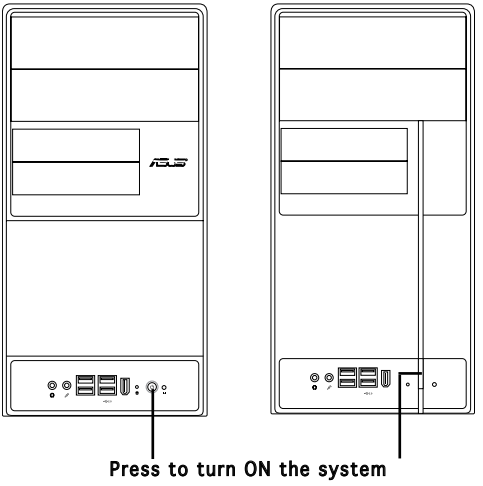
The barebone system supports Windows® 2000/XP operating systems (OS). Always install the latest OS version and corresponding updates so you can maximize the features of your hardware.

Because motherboard settings and hardware options vary, use the setup procedures presented in this chapter for general reference only. Refer to your OS documentation for more information.

- Windows XP OS setup cannot recognize Serial ATA hard drives without the necessary drivers. Use the bundled floppy disk when installing Windows XP OS to a Serial ATA hard drive.
- From the Windows XP setup screen, press F6 when prompted then follow succeeding screen instructions to install the SATA drivers.

3.2 Powering up

Press the system power button (⏻) to enter the OS.



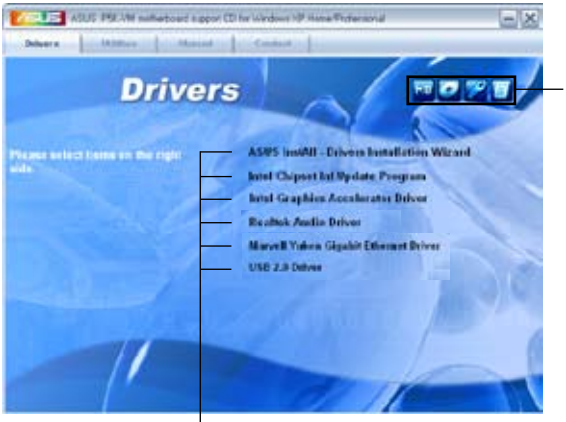
3.3 Support CD information

The support CD that came with the system contains useful software and several utility drivers that enhance the system features.

- Screen display and driver options may not be the same for different operating system versions.
- The contents of the support CD are subject to change at any time without notice. Visit the ASUS website for updates.

3.3.1 Running the support CD

To begin using the support CD, place the CD in your optical drive. The CD automatically displays the **Drivers** menu if Autorun is enabled in your computer.



If **Autorun** is NOT enabled in your computer, browse the contents of the support CD to locate the file ASSETUP.EXE from the BIN folder. Double-click the **ASSETUP.EXE** to run the CD.

ASUS InstAll-Drivers Installation Wizard

Installs the ASUS InstAll-Drivers Installation Wizard.

Intel Chipset Inf Update Program

Installs the Intel® chipset Inf update program.

Intel Graphics Accelerator Driver

Installs the Intel® graphics accelerator driver.

Realtek Audio Driver

Installs the Realtek® ALC883 audio driver and application.

Marvell Yukon Gigabit Ethernet Driver

Installs the Marvell Yukon Gigabit Ethernet LAN driver.

USB 2.0 Driver

Installs the Universal Serial Bus 2.0 (USB 2.0) driver.

3.3.2 Utilities menu

The Utilities menu shows the applications and other software that the motherboard supports.

ASUS InstAll-Installation Wizard for Utilities

Installs all of the utilities through the Installation Wizard.

ASUS Update

Allows you to download the latest version of the BIOS from the ASUS website.

Before using the ASUS Update, make sure that you have an Internet connection so you can connect to the ASUS website.

ASUS AI Gear2

Installs the ASUS AI Gear2 application.

ASUS AI Nap

Installs the ASUS AI Nap application.

ASUS PC Probe II

This smart utility monitors the fan speed, CPU temperature, and system voltages, and alerts you of any detected problems. This utility helps you keep your computer in healthy operating condition.

You can also install the following utilities from the ASUS Superb Software

ADOBE Acrobat Reader V7.0

Installs the Adobe® Acrobat® Reader that allows you to open, view, and print documents in Portable Document Format (PDF).

Microsoft DirectX 9.0c

Installs the Microsoft® DirectX 9.0 driver. The Microsoft DirectX® 9.0 is a multimedia technology that enhances computer graphics and sound. DirectX® improves the multimedia features of you computer so you can enjoy watching TV and movies, capturing videos, or playing games in your computer. Visit the Microsoft website (www.microsoft.com) for updates.

Symantec Norton Internet Security

The anti-virus application detects and protects your computer from viruses that destroys data.

WinDVD Copy5 Trial

Installs the WinDVD Copy5 Trial version.

Corel Snapfire Plus SE

Installs the Corel Snapfire Plus SE software.

3.3.3 Manual menu

The Manual menu contains a list of supplementary user manuals. Click an item to open the folder of the user manual.

Most user manual files are in Portable Document Format (PDF). Install the Adobe® Acrobat® Reader from the ASUS Superb Software Library CD before opening a user manual file.

3.3.4 ASUS Contact information

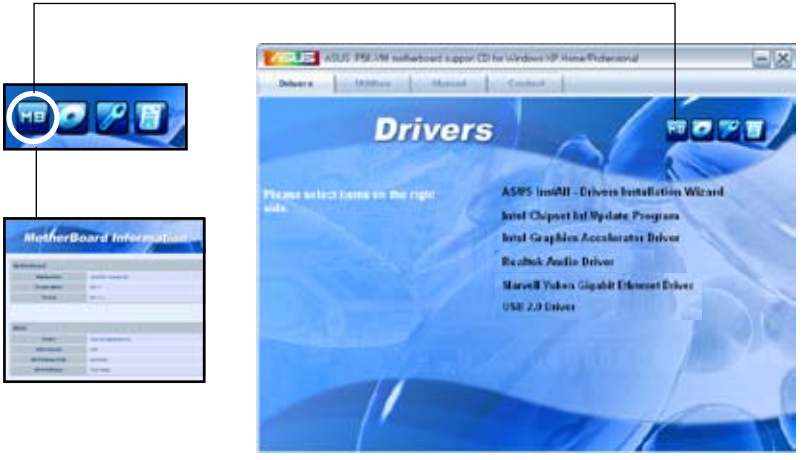
Click the Contact tab to display the ASUS contact information. You can also find this information on the inside front cover of this user guide.

3.3.5 Other information

The icons on the top right corner of the screen give additional information on the motherboard and the contents of the support CD. Click an icon to display the specified information.

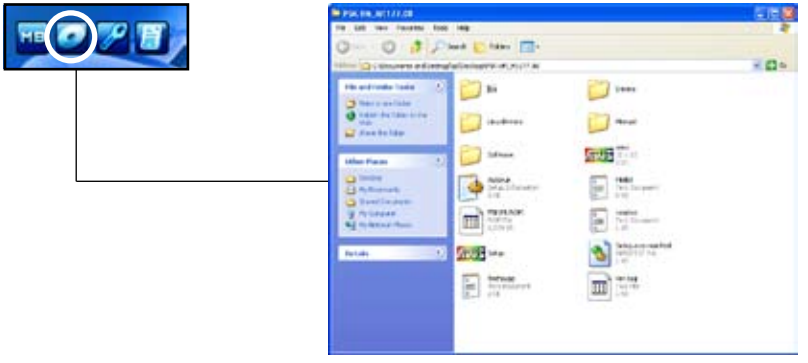
Motherboard Info

Displays the general specifications of the motherboard.



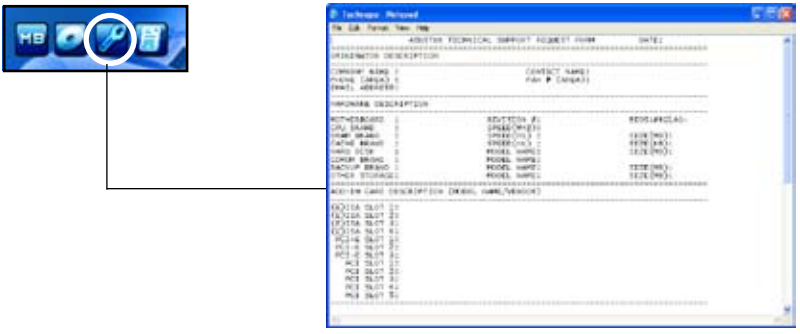
Browse this CD

Displays the support CD contents in graphical format.



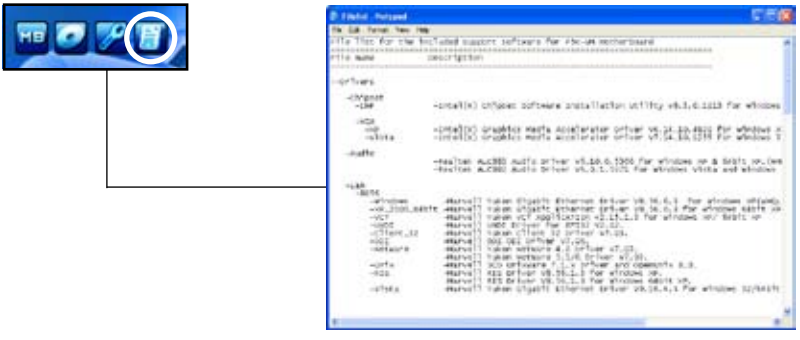
Technical support Form

Displays the ASUS Technical Support Request Form that you have to fill out when requesting technical support.



Filelist

Displays the contents of the support CD and a brief description of each in text format.



3.4 Software information

Most of the applications in the support CD have wizards that will conveniently guide you through the installation. View the online help or readme file that came with the software for more information.

ASUS PC Probe II

PC Probe II is a utility that monitors the computer's vital components and alerts you of any problem with these components. PC Probe II senses fan rotations, CPU temperature, and system voltages, among others. PC Probe II is software-based, allowing you to start monitoring your computer the moment you turn it on. With this utility, you are assured that your computer is always at a healthy operating condition.

Installing PC Probe II

To install PC Probe II on your computer:

1. Place the support CD to the optical drive. The **Drivers** installation tab appears if your computer has an enabled Autorun feature.

If Autorun is not enabled in your computer, browse the contents of the support CD to locate the setup.exe file from the ASUS PC Probe II folder. Double-click the setup.exe file to start installation.

2. Click the **Utilities** tab, then click **ASUS PC Probe II**.
3. Follow the screen instructions to complete installation.

Launching PC Probe II

You can launch the PC Probe II right after installation or anytime from the Windows® desktop.

To launch the PC Probe II from the Windows® desktop, click **Start > All Programs > ASUS > PC Probe II**. The PC Probe II main window appears.

After launching the application, the PC Probe II icon appears in the Windows® taskbar. Click this icon to close or restore the application.

Using PC Probe II

Main window

The PC Probe II main window allows you to view the current status of your system and change the utility configuration. By default, the main window displays the **Preference** section. You can close or restore the **Preference** section by clicking on the triangle on the main window right handle.

Button	Function
CONFIG	Opens the **Configuration** window
	Opens the **Report** window
DMI	Opens the **Desktop Management Interface** window
PCI	Opens the **Peripheral Component Interconnect** window
WMI	Opens the **Windows Management Instrumentation** window
USAGE	Opens the hard disk drive, memory, CPU usage window
	Shows/Hides the **Preference** section
	Minimizes the application
	Closes the application

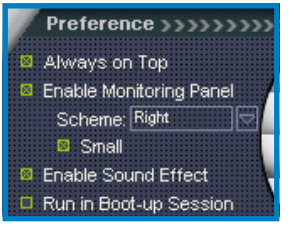
Sensor alert

When a system sensor detects a problem, the main window right handle turns red, as the illustrations below show.

When displayed, the monitor panel for that sensor also turns red. Refer to the **Monitor panels** section for details.

Preferences

You can customize the application using the Preference section in the main window. Click the box before each preference to activate or deactivate.



Hardware monitor panels

The hardware monitor panels display the current value of a system sensor such as fan rotation, CPU temperature, and voltages.

The hardware monitor panels come in two display modes: hexagonal (large) and rectangular (small). When you check the **Enable Monitoring Panel** option from the **Preference** section, the monitor panels appear on your computer's desktop.

Large display

Small display

Changing the monitor panels position

To change the position of the monitor panels on the desktop, click the arrow down button of the **Scheme** options, then select another position from the list box. Click **OK** when finished.

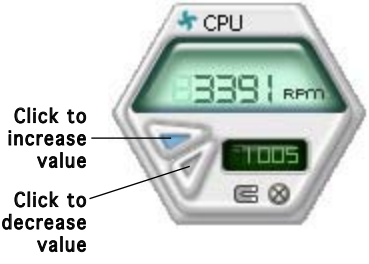
Moving the monitor panels

All monitor panels move together using a magnetic effect. If you want to detach a monitor panel from the group, click the horseshoe magnet icon. You can now move or reposition the panel independently.

Adjusting the sensor threshold value

You can adjust the sensor threshold value in the monitor panel by clicking the arrow buttons. You can also adjust the threshold values using the **Config** window.

You cannot adjust the sensor threshold values in a small monitoring panel.



Monitoring sensor alert

The monitor panel turns red when a component value exceeds or is lower than the threshold value. Refer to the illustrations below.

Large display

Small display

WMI browser

Click WMI to display the WMI (Windows Management Instrumentation) browser. This browser displays various Windows® management information. Click an item from the left panel to display on the right panel. Click the plus sign (+) before **WMI Information** to display the available information.

You can enlarge or reduce the browser size by dragging the bottom right corner of the browser.

DMI browser

Click DMI to display the DMI (Desktop Management Interface) browser. This browser displays various desktop and system information. Click the plus sign (+) before **DMI Information** to display the available information.

PCI browser

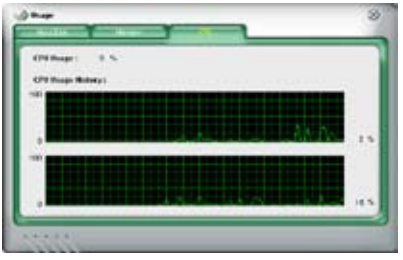
Click PCI to display the PCI (Peripheral Component Interconnect) browser. This browser provides information on the PCI devices installed on your system. Click the plus sign (+) before the **PCI Information** item to display available information.

Usage

The **Usage** browser displays real-time information on the CPU, hard disk drive space, and memory usage. Click USAGE to display the Usage browser.

CPU usage

The **CPU** tab displays real-time CPU usage in line graph representation. If the CPU has an enabled Hyper-Threading, two separate line graphs display the operation of the two logical processors.



Hard disk drive space usage

The **Hard Disk** tab displays the used and available hard disk drive space. The left panel of the tab lists all logical drives. Click a hard disk drive to display the information on the right panel. The pie chart at the bottom of the window represents the used (blue) and the available HDD space.

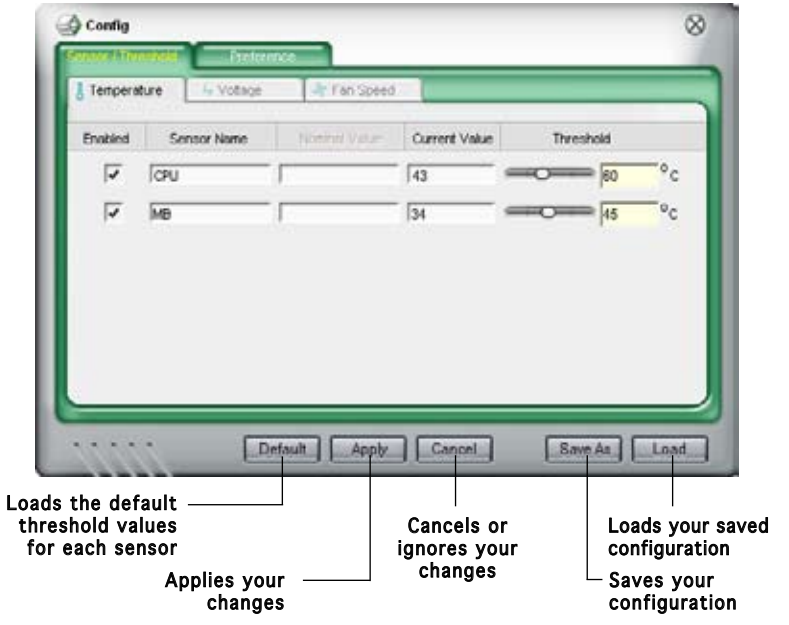
Memory usage

The **Memory** tab shows both used and available physical memory. The pie chart at the bottom of the window represents the used (blue) and the available physical memory.

Configuring PC Probe II

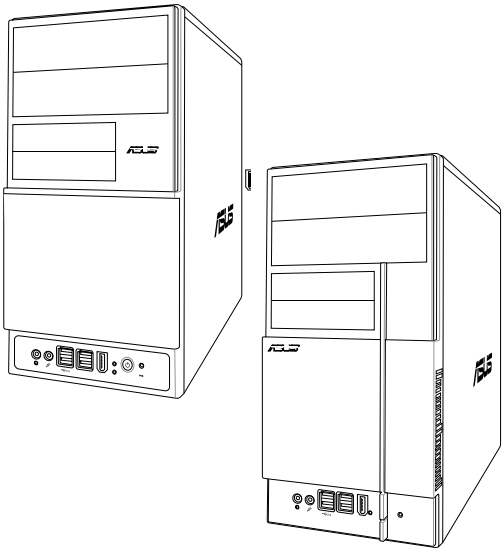
Click CONFIG to view and adjust the sensor threshold values.

The **Config** window has two tabs: **Sensor/Threshold** and **Preference**. The **Sensor/Threshold** tab enables you to activate the sensors or to adjust the sensor threshold values. The **Preference** tab allows you to customize sensor alerts, change temperature scale, or enable the Q-Fan feature.



Chapter 4

This chapter gives information about he motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

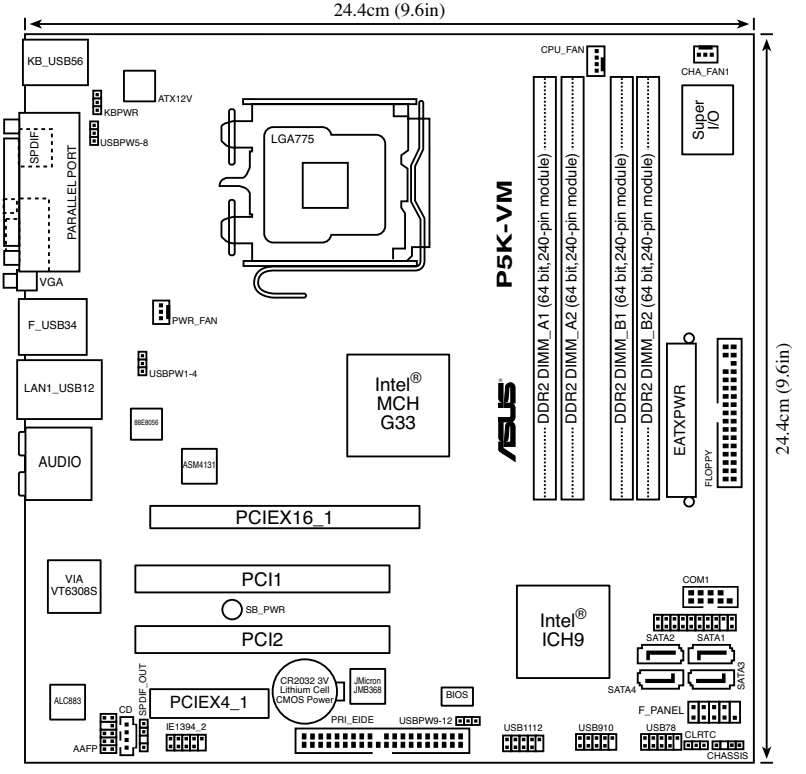


Motherboard introduction

4.1 Introduction

The Vintage V-Series P5G33 barebone system comes with an ASUS motherboard. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.

4.2 Motherboard layout



4.3 Jumpers

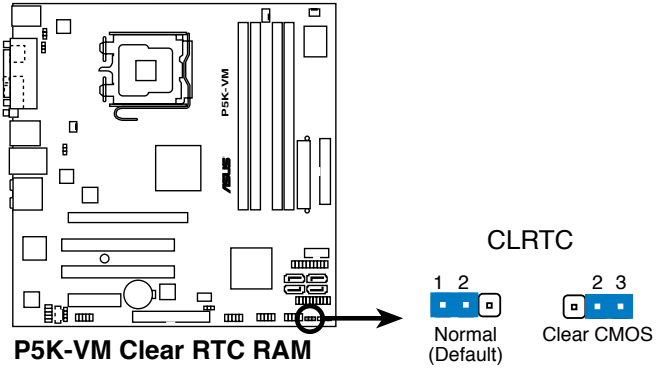
1. Clear RTC RAM (CLRTC)

This jumper allows you to clear the Real Time Clock (RTC) RAM in CMOS. You can clear the CMOS memory of date, time, and system setup parameters by erasing the CMOS RTC RAM data. The onboard button cell battery powers the RAM data in CMOS, which include system setup information such as system passwords.

To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Remove the onboard battery.
3. Move the jumper cap from pins 1-2 (default) to pins 2-3. Keep the cap on pins 2-3 for about 5~10 seconds, then move the cap back to pins 1-2.
4. Re-install the battery.
5. Plug the power cord and turn ON the computer.
6. Hold down the <Del> key during the boot process and enter BIOS setup to re-enter data.

Except when clearing the RTC RAM, never remove the cap on CLRTC jumper default position. Removing the cap will cause system boot failure!

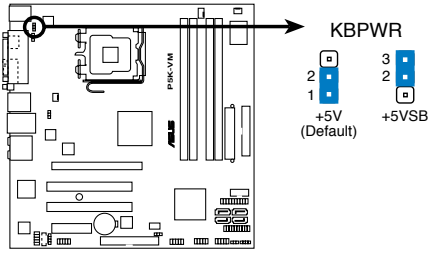


P5K-VM Clear RTC RAM

You do not need to clear the RTC when the system hangs due to overclocking. For system failure due to overclocking, use the C.P.R. (CPU Parameter Recall) feature. Shut down and reboot the system so the BIOS can automatically reset parameter settings to default values.

2. Keyboard power (3-pin KBPWR)

This jumper allows you to enable or disable the keyboard wake-up feature. Set this jumper to pins 2-3 (+5VSB) to wake up the computer when you press a key on the keyboard (the default is the Space Bar). This feature requires an ATX power supply that can supply at least 1A on the +5VSB lead, and a corresponding setting in the BIOS.

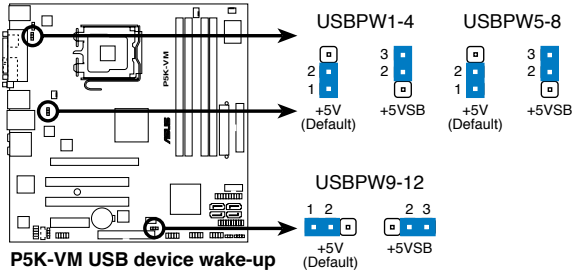


P5K-VM Keyboard power setting

3. USB device wake-up (3-pin USBPW1-4, USBPW5-8, USBPW9-12)

Set these jumpers to +5V to wake up the computer from S1 sleep mode (CPU stopped, DRAM refreshed, system running in low power mode) using the connected USB devices. Set to +5VSB to wake up from S3 and S4 sleep modes.

The USBPW1-4 jumpers are for the rear USB ports. The USBPW5-8 and USBPW910 jumpers are for the internal USB connectors that you can connect to additional USB ports.



P5K-VM USB device wake-up

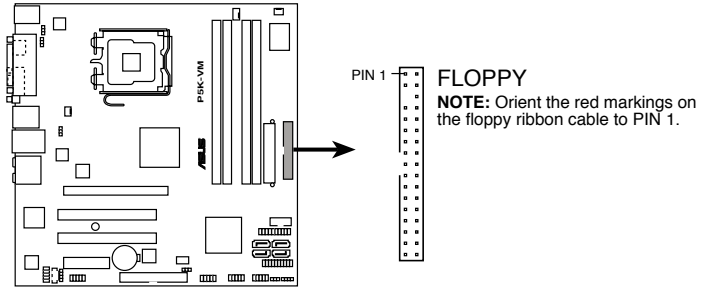
- The USB device wake-up feature requires a power supply that can provide 500mA on the +5VSB lead for each USB port; otherwise, the system will not power up.
- The total current consumed must NOT exceed the power supply capability (+5VSB) whether under normal condition or in sleep mode.

4.3 Connectors

1. Floppy disk drive connector (34-1 pin FLOPPY)

This connector is for the provided floppy disk drive (FDD) signal cable. Insert one end of the cable to this connector, then connect the other end to the signal connector at the back of the floppy disk drive.

Pin 5 on the connector is removed to prevent incorrect cable connection when using an FDD cable with a covered Pin 5.



P5K-VM Floppy disk drive connector

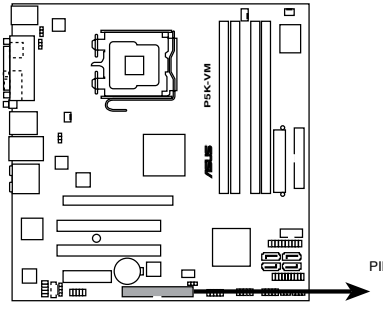
2. IDE connectors (40-1 pin PRI_IDE)

The onboard IDE connectors are for Ultra DMA 100/66/33 signal cables. There are three connectors on each Ultra DMA 100/66/33 signal cable: blue, black, and gray. Connect the blue connector to the motherboard's IDE connector, then select one of the following modes to configure your device(s).

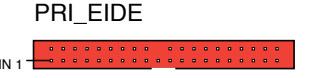
	Drive jumper setting	Mode of device(s)	Cable connector
Single device	Cable-Select or Master	-	Black
Two devices	Cable-Select	Master	Black
		Slave	Gray
	Master	Master	Black or gray
	Slave	Slave	

- Pin 20 on the IDE connector is removed to match the covered hole on the Ultra DMA cable connector. This prevents incorrect insertion when you connect the IDE cable.
- Use the 80-conductor IDE cable for Ultra DMA 133/100/66 IDE devices.

If any device jumper is set as "Cable-Select," make sure all other device jumpers have the same setting.



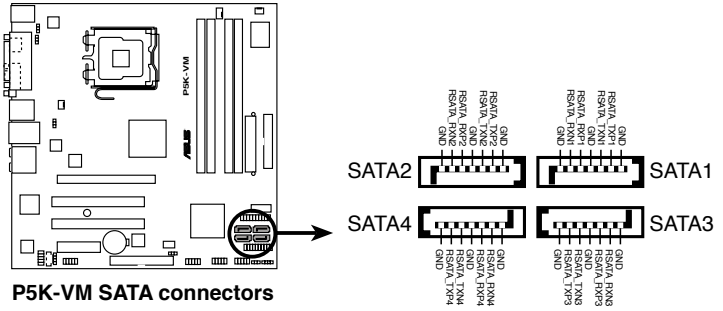
P5K-VM IDE connector



NOTE: Orient the red markings (usually zigzag) on the IDE ribbon cable to PIN 1.

3. ICH9 Serial ATA connectors (7-pin SATA1 [red], SATA2 [black], SATA3 [red], SATA4 [black])

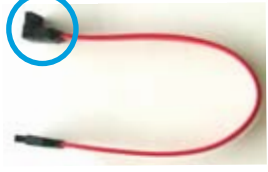
These connectors are for the Serial ATA signal cables for Serial ATA hard disk drives.



P5K-VM SATA connectors

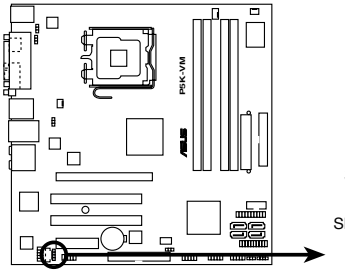
Connect the right-angle side of SATA signal cable to SATA device. Or you may connect the right-angle side of SATA cable to the onboard SATA port to avoid mechanical conflict with huge graphics cards.

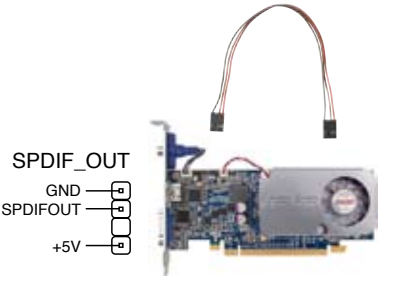
right angle side



4. Digital audio connector (4-1 pin SPDIF_OUT for ASUS HDMI VGA card)

This connector is for an additional Sony/Philips Digital Interface (S/PDIF) port(s). If you are using an ASUS HDMI-equipped graphics card, connect the HDMI card to this connector with a S/PDIF Out cable.



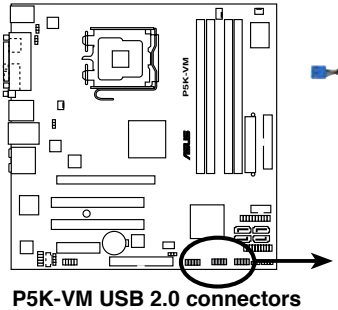


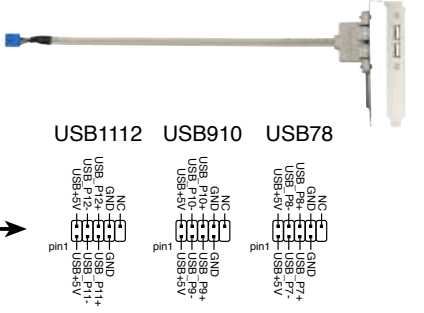
P5K-VM Digital audio connector

The ASUS HDMI-equipped graphics card and the S/PDIF Out cable are purchased separately.

5. USB connectors (10-1 pin USB78, USB 910, USB1112)

These connectors are for USB 2.0 ports. Connect the USB module cable to any of these connectors, then install the module to a slot opening at the back of the system chassis. These USB connectors comply with USB 2.0 specification that supports up to 480 Mbps connection speed.





P5K-VM USB 2.0 connectors

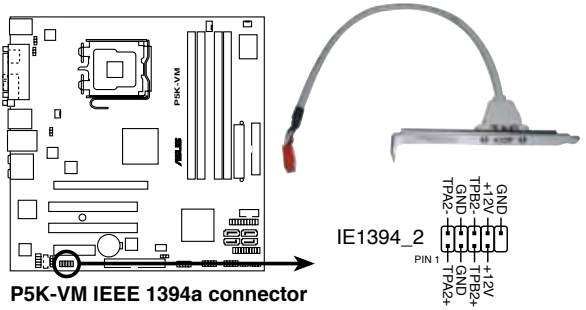
Never connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!

You can connect the front panel USB cable to the ASUS Q-Connector (USB, blue) first, and then install the Q-Connector (USB) to the USB connector onboard if your chassis supports front panel USB ports.

The USB module cable is purchased separately.

6. IEEE 1394a port connector (10-1 pin IE1394_2)

This connector is for a IEEE 1394a port. Connect the IEEE 1394a module cable to this connector, then install the module to a slot opening at the back of the system chassis.



P5K-VM IEEE 1394a connector

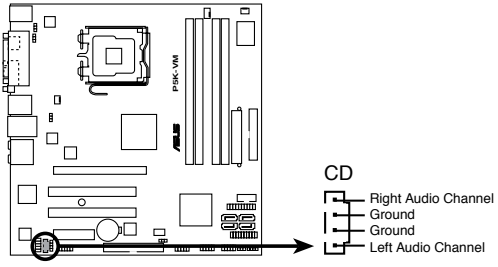
Never connect a USB cable to the IEEE 1394a connector. Doing so will damage the motherboard!

You can connect the front panel 1394 cable to the ASUS Q-Connector (1394, red) first, and then install the Q-Connector (1394) to the 1394 connector onboard if your chassis supports front panel 1394 ports.

The IEEE 1394a module cable is purchased separately.

7. Optical drive audio connector (4-pin CD)

These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, TV tuner, or MPEG card.

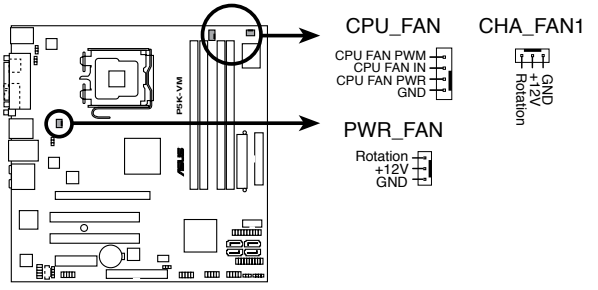


P5K-VM Internal audio connector

8. CPU, chassis, and power fan connectors (4-pin CPU_FAN, 3-pin CHA_FAN1, 3-pin PWR_FAN)

The fan connectors support cooling fans of 350 mA~2000 mA (24 W max.) or a total of 1 A~7 A (84 W max.) at +12V. Connect the fan cables to the fan connectors on the motherboard, making sure that the black wire of each cable matches the ground pin of the connector.

Do not forget to connect the fan cables to the fan connectors. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan connectors!

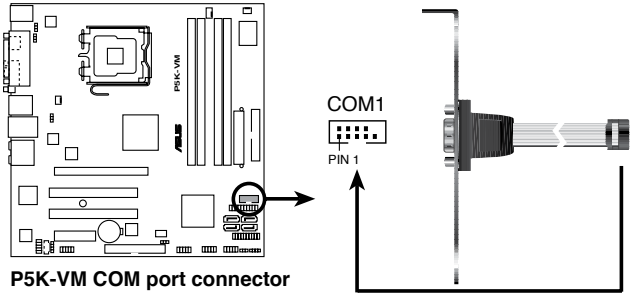


P5K-VM Fan connectors

Only the CPU-FAN connectors support the ASUS Q-FAN feature.

9. Serial port connector (10-1 pin COM1)

This connector is for a serial (COM) port. Connect the serial port module cable to this connector, then install the module to a slot opening at the back of the system chassis.



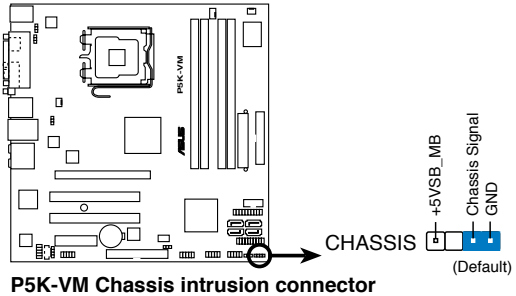
P5K-VM COM port connector

The serial port module is purchased separately.

10. Chassis intrusion connector (4-1 pin CHASSIS)

This connector is for a chassis-mounted intrusion detection sensor or switch. Connect one end of the chassis intrusion sensor or switch cable to this connector. The chassis intrusion sensor or switch sends a high-level signal to this connector when a chassis component is removed or replaced. The signal is then generated as a chassis intrusion event.

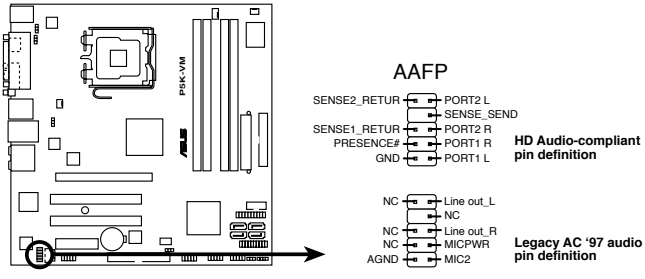
By default, the pin labeled “Chassis Signal” and “Ground” are shorted with a jumper cap. Remove the jumper caps only when you intend to use the chassis intrusion detection feature.



P5K-VM Chassis intrusion connector

11. Front panel audio connector (10-1 pin AAFP)

This connector is for a chassis-mounted front panel audio I/O module that supports either HD Audio or legacy AC`97 audio standard. Connect one end of the front panel audio I/O module cable to this connector.

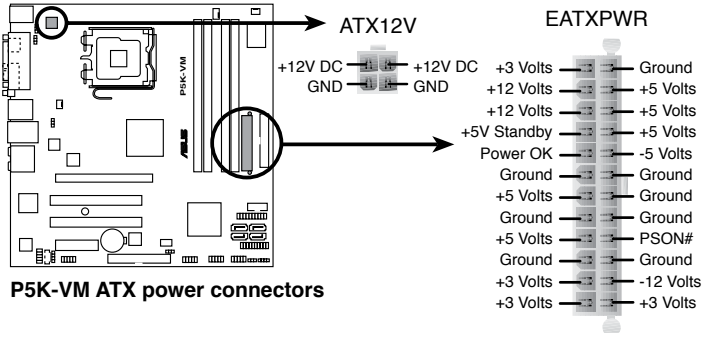


P5K-VM Analog front panel connector

- We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard’s high-definition audio capability.
- If you want to connect a high-definition front panel audio module to this connector, set the Front Panel Type item in the BIOS setup to [HD Audio]; if you want to connect an AC'97 front panel audio module to this connector, set the item to [AC'97]. By default, this connector is set to [HD Audio]. See section 2.4.5 Onboard Devices Configuration for details.

12. ATX power connectors (24-pin EATXPWR, 4-pin ATX12V)

These connectors are for ATX power supply plugs. The power supply plugs are designed to fit these connectors in only one orientation. Find the proper orientation and push down firmly until the connectors completely fit.

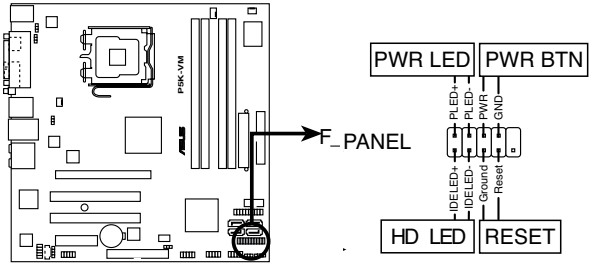


P5K-VM ATX power connectors

- For a fully configured system, we recommend that you use a power supply unit (PSU) that complies with ATX 12 V Specification 2.0 (or later version) and provides a minimum power of 400 W.
- Do not forget to connect the 4-pin EATX12V power plug; otherwise, the system will not boot.
- Use of a PSU with a higher power output is recommended when configuring a system with more power-consuming devices. The system may become unstable or may not boot up if the power is inadequate.
- The ATX 12 V Specification 2.0-compliant (400W) PSU has been tested to support the motherboard power requirements with the following configuration:
  CPU: Intel® Pentium® Extreme 3.73GHz
  Memory: 512 MB DDR2 (x4)
  Graphics card: ASUS EAX1900XT
  Parallel ATA device: IDE hard disk drive
  Serial ATA device: SATA hard disk drive (x2)
  Optical drive: DVD-RW
- If you want to use two high-end PCI Express x16 cards, use a PSU with 500W to 600W power or above to ensure the system stability.

13. System panel connector (10-1 pin F_PANEL)

This connector supports several chassis-mounted functions.

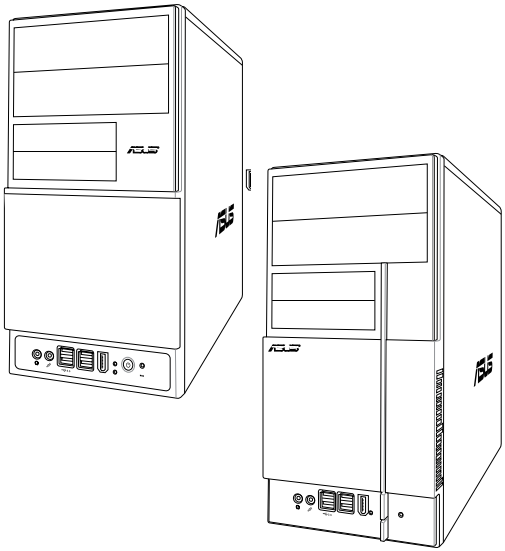


P5K-VM System panel connector

- **System power LED (2-pin PLED)**
  This 2-pin connector is for the system power LED. Connect the chassis power LED cable to this connector. The system power LED lights up when you turn on the system power, and blinks when the system is in sleep mode.
- **Hard disk drive activity (2-pin HDLED)**
  This 2-pin connector is for the HDD Activity LED. Connect the HDD Activity LED cable to this connector. The IDE LED lights up or flashes when data is read from or written to the HDD.
- **Power/Soft-off button (2-pin PWRSW)**
  This connector is for the system power button. Pressing the power button turns the system ON or puts the system in SLEEP or SOFT-OFF mode depending on the BIOS settings. Pressing the power switch for more than four seconds while the system is ON turns the system OFF.
- **Reset button (2-pin RESET)**
  This 2-pin connector is for the chassis-mounted reset button for system reboot without turning off the system power.

Chapter 5

This chapter tells how to change system settings through the BIOS Setup menus and describes the BIOS parameters.



BIOS setup

5.1 Managing and updating your BIOS

The following utilities allow you to manage and update the motherboard Basic Input/Output System (BIOS) setup.

1. **ASUS Update** (Updates the BIOS in Windows® environment.)
2. **ASUS EZ Flash 2** (Updates the BIOS using a floppy disk or USB flash disk.)
3. **ASUS AFUDOS** (Updates the BIOS using a bootable floppy disk.)
4. **ASUS CrashFree BIOS 3** (Updates the BIOS using a bootable floppy disk, USB flash disk or the motherboard support CD when the BIOS file fails or gets corrupted.)

Refer to the corresponding sections for details on these utilities.

Save a copy of the original motherboard BIOS file to a bootable floppy disk or USB flash disk in case you need to restore the BIOS in the future. Copy the original motherboard BIOS using the ASUS Update or AFUDOS utilities.

5.1.1 ASUS Update utility

The ASUS Update is a utility that allows you to manage, save, and update the motherboard BIOS in Windows® environment. The ASUS Update utility allows you to:

- Save the current BIOS file
- Download the latest BIOS file from the Internet
- Update the BIOS from an updated BIOS file
- Update the BIOS directly from the Internet, and
- View the BIOS version information.

This utility is available in the support CD that comes with the motherboard package.

ASUS Update requires an Internet connection either through a network or an Internet Service Provider (ISP).

Installing ASUS Update

To install ASUS Update:

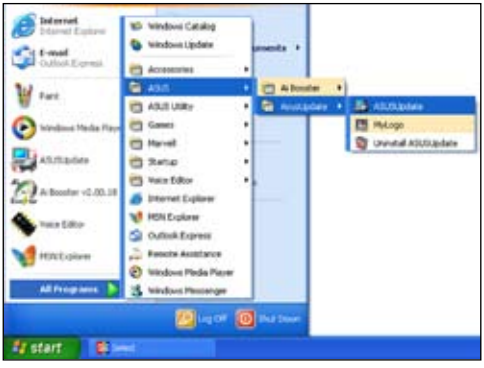
1. Place the support CD in the optical drive. The Drivers menu appears.
2. Click the **Utilities** tab, then click **Install ASUS Update**.
3. The ASUS Update utility is copied to your system.

Quit all Windows® applications before you update the BIOS using this utility.

Updating the BIOS through the Internet

To update the BIOS through the Internet:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.



Select the Update Method
Update BIOS from the Internet
Save current BIOS to a file
Update BIOS from a file
Update BIOS from the Internet
Download BIOS from the Internet
Check BIOS Information
Options

2. Select **Update BIOS** from the Internet option from the drop-down menu, then click **Next**.

3. Select the ASUS FTP site nearest you to avoid network traffic, or click **Auto Select**. Click **Next**.

4. From the FTP site, select the BIOS version that you wish to download. Click **Next**.
5. Follow the screen instructions to complete the update process.

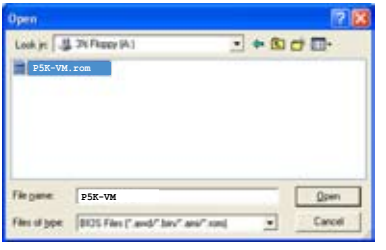
The ASUS Update utility is capable of updating itself through the Internet. Always update the utility to avail all its features.

Updating the BIOS through a BIOS file

To update the BIOS through a BIOS file:

1. Launch the ASUS Update utility from the Windows® desktop by clicking **Start > Programs > ASUS > ASUSUpdate > ASUSUpdate**. The ASUS Update main window appears.
2. Select Update BIOS from a file option from the drop-down menu, then click **Next**.

3. Locate the BIOS file from the Open window, then click **Open**.
4. Follow the screen instructions to complete the update process.



5.1.2 Creating a bootable floppy disk

1. Do either one of the following to create a bootable floppy disk.

   DOS environment

   a. Insert a 1.44MB floppy disk into the drive.

   b. At the DOS prompt, type `format A:/S` then press <Enter>.

   Windows® XP environment

   a. Insert a 1.44 MB floppy disk to the floppy disk drive.

   b. Click **Start** from the Windows® desktop, then select **My Computer**.

   c. Select the 3 1/2 Floppy Drive icon.

   d. Click File from the menu, then select **Format**. A **Format 3 1/2 Floppy Disk** window appears.

   e. Select **Create an MS-DOS startup disk** from the format options field, then click **Start**.

2. Copy the original or the latest motherboard BIOS file to the bootable floppy disk.

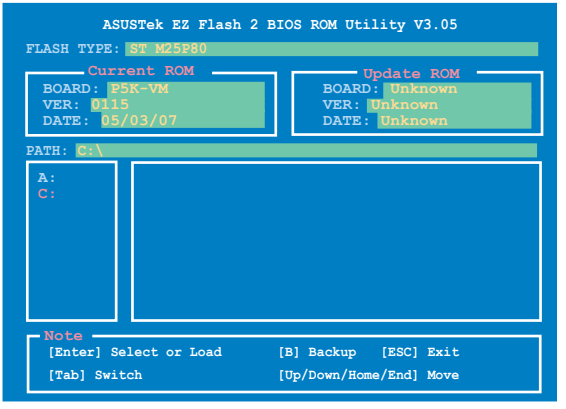
5.1.3 ASUS EZ Flash 2 utility

The ASUS EZ Flash 2 feature allows you to update the BIOS without having to go through the long process of booting from a floppy disk and using a DOS-based utility. The EZ Flash 2 utility is built-in the BIOS chip so it is accessible by pressing <Alt> + <F2> during the Power-On Self Tests (POST).

To update the BIOS using EZ Flash 2:

1. Visit the ASUS website (www.asus.com) to download the latest BIOS file for the motherboard.
2. Save the BIOS file to a floppy disk or a USB flash disk, then restart the system.
3. You can launch the EZ Flash 2 by two methods.
   (1) Insert the floppy disk / USB flash disk that contains the BIOS file to the floppy disk drive or the USB port.

   Press <Alt> + <F2> during POST to display the following.



   (2) Enter BIOS setup program. Go to the **Tools** menu to select **EZ Flash2** and press <Enter> to enable it.

   You can switch between drives by pressing <Tab> before the correct file is found. Then press <Enter>.
4. When the correct BIOS file is found, EZ Flash 2 performs the BIOS update process and automatically reboots the system when done.

- This function can support devices such as USB flash disk, or floppy disk with **FAT 32/16** format and single partition only.
- Do not shut down or reset the system while updating the BIOS to prevent system boot failure!

5.1.4 AFUDOS utility

The AFUDOS utility allows you to update the BIOS file in DOS environment using a bootable floppy disk with the updated BIOS file. This utility also allows you to copy the current BIOS file that you can use as backup when the BIOS fails or gets corrupted during the updating process.

Copying the current BIOS

To copy the current BIOS file using the AFUDOS utility:

- Make sure that the floppy disk is not write-protected and has at least 1024KB free space to save the file.
- The succeeding BIOS screens are for reference only. The actual BIOS screen displays may not be same as shown.

1. Copy the AFUDOS utility (afudos.exe) from the motherboard support CD to the bootable floppy disk you created earlier.
2. Boot the system in DOS mode, then at the prompt type:

   afudos /o[filename]

   where the [filename] is any user-assigned filename not more than eight alphanumeric characters for the main filename and three alphanumeric characters for the extension name.

3. Press <Enter>. The utility copies the current BIOS file to the floppy disk.

```
A:\>afudos /oOLDBIOS1.rom
AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB))
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.
    Reading flash ..... done
    Write to file..... ok
A:\>
```

The utility returns to the DOS prompt after copying the current BIOS file.

Updating the BIOS file

To update the BIOS file using the AFUDOS utility:

1. Visit the ASUS website (www.asus.com) and download the latest BIOS file for the motherboard. Save the BIOS file to a bootable floppy disk.

Write the BIOS filename on a piece of paper. You need to type the exact BIOS filename at the DOS prompt.

2. Copy the AFUDOS utility (afudos.exe) from the motherboard support CD to the bootable floppy disk you created earlier.
3. Boot the system in DOS mode, then at the prompt type:

   afudos /i[filename]

   where [filename] is the latest or the original BIOS file on the bootable floppy disk.

```
A:\>afudos /iP5K-VM.ROM
```

4. The utility verifies the file and starts updating the BIOS.

```
A:\>afudos /iP5K-VM.ROM
AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB))
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.

    WARNING!! Do not turn off power during flash BIOS
    Reading file ....... done
    Reading flash ...... done

    Advance Check ......
    Erasing flash ...... done
    Writing flash ...... 0x0008CC00 (9%)
```

Do not shut down or reset the system while updating the BIOS to prevent system boot failure!

5. The utility returns to the DOS prompt after the BIOS update process is completed. Reboot the system from the hard disk drive.

```
A:\>afudos /iP5K-VM.ROM
AMI Firmware Update Utility - Version 1.19(ASUS V2.07(03.11.24BB))
Copyright (C) 2002 American Megatrends, Inc. All rights reserved.

    WARNING!! Do not turn off power during flash BIOS
    Reading file ....... done
    Reading flash ...... done

    Advance Check ......
    Erasing flash ...... done
    Writing flash ...... done
    Verifying flash .... done

    Please restart your computer

A:\>
```

5.1.5 ASUS CrashFree BIOS 3 utility

The ASUS CrashFree BIOS 3 is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can update a corrupted BIOS file using the motherboard support CD, the floppy disk, or the USB flash disk that contains the updated BIOS file.

- Prepare the motherboard support CD, the floppy disk or the USB flash disk containing the updated motherboard BIOS before using this utility.
- If you use a SATA optical drive, always connect the SATA cable to the SATA1/SATA2 connector; otherwise, the utility will not function.

Recovering the BIOS from the support CD

To recover the BIOS from the support CD:

1. Turn on the system.
2. Insert the motherboard support CD to the optical drive.
3. The utility displays the following message and automatically checks the CD for the BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
```

When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.

```
Bad BIOS checksum. Starting BIOS recovery...
Checking for floppy...
Floppy found!
Reading file "V-P5G33.ROM". Completed.
Start flashing...
```

4. Restart the system after the utility completes the updating process.

Recovering the BIOS from the USB flash disk

To recover the BIOS from the USB flash disk:

1. Insert the USB flash disk that contains BIOS file to the USB port.
2. Turn on the system.
3. The utility will automatically checks the devices for the BIOS file When found, the utility reads the BIOS file and starts flashing the corrupted BIOS file.
4. Restart the system after the utility completes the updating process.

- Only the USB flash disk with FAT 32/16 format and single partition can support ASUS CrashFree BIOS 3. The device size should be smaller than 8GB.
- DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

5.2 BIOS setup program

This motherboard supports a programmable Serial Peripheral Interface (SPI) chip that you can update using the provided utility described in section “4.1 Managing and updating your BIOS.”

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to “Run Setup.” This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the SPI chip.

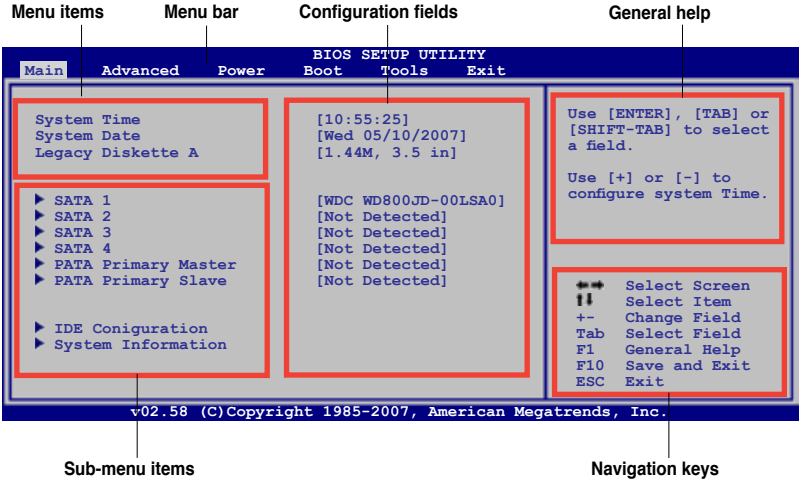
The SPI chip on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On Self-Test (POST) to enter the Setup utility; otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, restart the system by pressing <Ctrl+Alt+Delete>, or by pressing the reset button on the system chassis. You can also restart by turning the system off and then back on. Do this last option only if the first two failed.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.

- The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Setups Default** item under the Exit Menu. See section **2.8 Exit Menu**.
- The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.
- Visit the ASUS website (www.asus.com) to download the latest BIOS file for this motherboard.

5.2.1 BIOS menu screen



5.2.2 Menu bar

The menu bar on top of the screen has the following main items:

Main	For changing the basic system configuration
Advanced	For changing the advanced system settings
Power	For changing the advanced power management (APM) configuration
Boot	For changing the system boot configuration
Tools	For Configuring options for special functions
Exit	For selecting the exit options and loading default settings.

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

5.2.3 Navigation keys

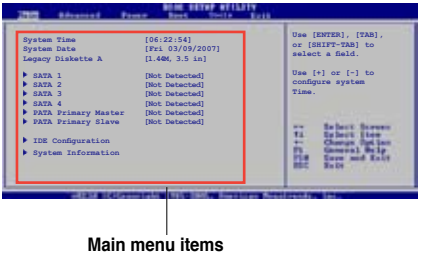
At the bottom right corner of a menu screen are the navigation keys for that particular menu. Use the navigation keys to select items in the menu and change the settings.

Some of the navigation keys differ from one screen to another.

5.2.4 Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting Main shows the Main menu items.

The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.



5.2.5 Sub-menu items

A solid triangle before each item on any menu screen means that the iteam has a sub-menu. To display the sub-menu, select the item and press <Enter>.

5.2.6 Configuration fields

These fields show the values for the menu items. If an item is user- configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

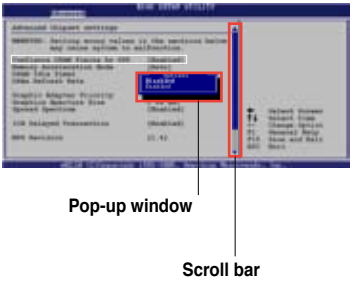
A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to “4.2.7 Pop-up window.”

5.2.7 Pop-up window

Select a menu item then press <Enter> to display a pop-up window with the configuration options for that item.

5.2.8 Scroll bar

A scroll bar appears on the right side of a menu screen when there are items that do not fit on the screen. Press the Up/Down arrow keys or <Page Up> /<Page Down> keys to display the other items on the screen.



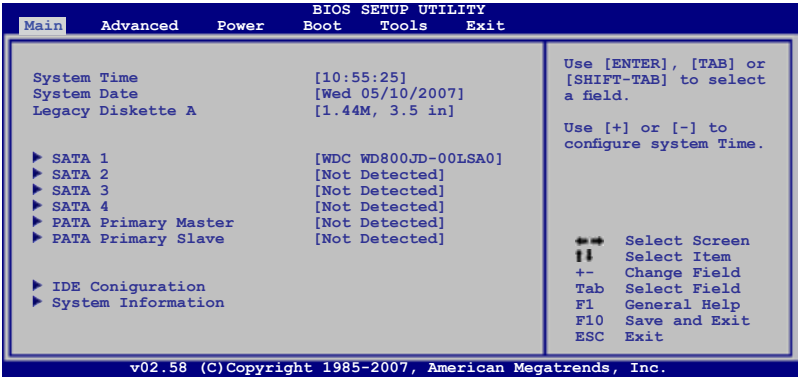
5.2.9 General help

At the top right corner of the menu screen is a brief description of the selected item.

5.3 Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.

Refer to section **2.2.1 BIOS menu screen** for information on the menu screen items and how to navigate through them.


BIOS SETUP UTILITY
Main Advanced Power Boot Tools Exit
System Time [10:55:25]
System Date [Wed 05/10/2007]
Legacy Diskette A [1.44M, 3.5 in]
SATA 1 [WDC WD800JD-00LSA0]
SATA 2 [Not Detected]
SATA 3 [Not Detected]
SATA 4 [Not Detected]
PATA Primary Master [Not Detected]
PATA Primary Slave [Not Detected]
IDE Coniguration
System Information
Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system Time.
Select Screen
Select Item
+- Change Field
Tab Select Field
F1 General Help
F10 Save and Exit
ESC Exit
v02.58 (C)Copyright 1985-2007, American Megatrends, Inc.

5.3.1 System Time [xx:xx:xx]

Allows you to set the system time.

5.3.2 System Date [Day xx/xx/xxxx]

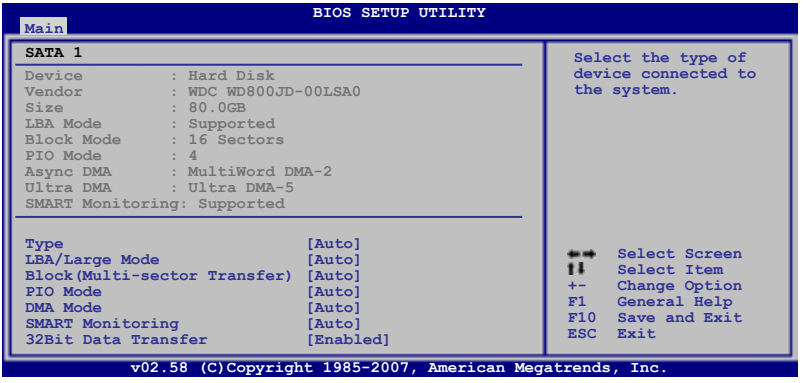
Allows you to set the system date.

5.3.3 Legacy Diskette A [1.44M, 3.5 in.]

Sets the type of floppy drive installed.
Configuration options: [Disabled] [720K, 3.5 in.] [1.44M, 3.5 in.]

5.3.4 SATA 1~4; PATA Primary Master/Slave

While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.



The BIOS automatically detects the values opposite the dimmed items (Device, Vendor, Size, LBA Mode, Block Mode, PIO Mode, Async DMA, Ultra DMA, and SMART monitoring). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

Type [Auto]

Selects the type of IDE drive. Setting to [Auto] allows automatic selection of the appropriate IDE device type. Select [CDROM] if you are specifically configuring a CD-ROM drive. Select [ARMD] (ATAPI Removable Media Device) if your device is either a ZIP, LS-120, or MO drive.
Configuration options: [Not Installed] [Auto] [CDROM] [ARMD]

This item does not appear when you select the **PATA Primary Master/Slave** device.

LBA/Large Mode [Auto]

Enables or disables the LBA mode. Setting to [Auto] enables the LBA mode if the device supports this mode, and if the device was not previously formatted with LBA mode disabled. Configuration options: [Disabled] [Auto]

Block (Multi-sector Transfer) [Auto]

Enables or disables data multi-sectors transfers. When set to [Auto], the data transfer from and to the device occurs multiple sectors at a time if the device supports multi-sector transfer feature. When set to [Disabled], the data transfer from and to the device occurs one sector at a time.
Configuration options: [Disabled] [Auto]

PIO Mode [Auto]

Selects the PIO mode.
Configuration options: [Auto] [0] [1] [2] [3] [4]

DMA Mode [Auto]

Selects the DMA mode. Configuration options: [Auto] [SWDMA0] [SWDMA1] [SWDMA2] [MWDMA0] [MWDMA1] [MWDMA2] [UDMA0] [UDMA1] [UDMA2] [UDMA3] [UDMA4] [UDMA5]

SMART Monitoring [Auto]

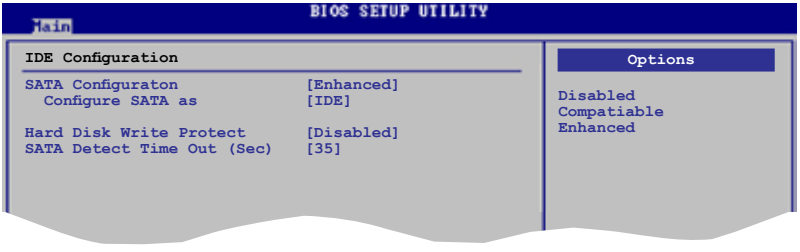
Sets the Smart Monitoring, Analysis, and Reporting Technology.
Configuration options: [Auto] [Disabled] [Enabled]

32Bit Data Transfer [Enabled]

Enables or disables 32-bit data transfer.
Configuration options: [Disabled] [Enabled]

5.3.5 IDE Configuration

The items in this menu allow you to set or change the configurations for the IDE devices installed in the system. Select an item then press <Enter> if you want to configure the item.



SATA Configuration [Enhanced]

Configuration options: [Disabled] [Compatible] [Enhanced]

Configure SATA As [IDE]

Sets the configuration for the Serial ATA connectors supported by the Southbridge chip.

The AHCI allows the onboard storage driver to enable advanced Serial ATA features that increases storage performance on random workloads by allowing the drive to internally optimize the order of commands.

If you want to use the Serial ATA hard disk drives as Parallel ATA physical storage devices, keep the defaul setting [IDE].

If you want the Serial ATA hard disk drives to use the Advanced Host Controller Interface (AHCI), set this item to [AHCI].

Hard Disk Write Protect [Disabled]

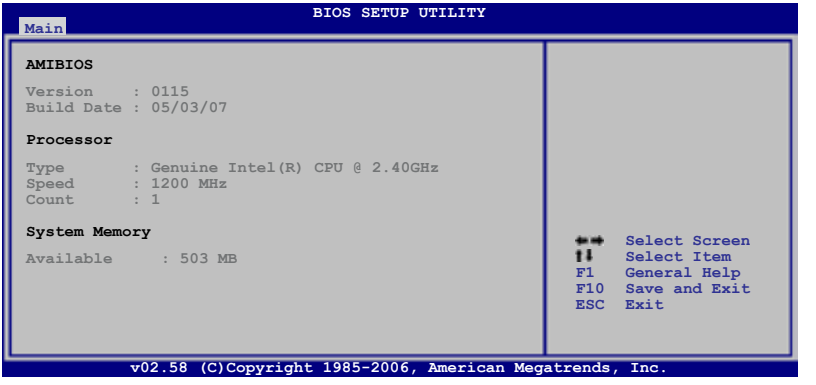
Disables or enables device write protection. This will be effective only if device is accessed throuh BIOS. Confiuration option: [Disabled] [Enabled]

SATA Detect Time Out (Sec) [35]

Selects the time out value for detecting ATA/ATAPI devices.
Configuration options: [0] [5] [10] [15] [20] [25] [30] [35]

5.3.6 System Information

This menu gives you an overview of the general system specifications. The BIOS automatically detects the items in this menu.



AMI BIOS

Displays the auto-detected BIOS information.

Processor

Displays the auto-detected CPU specification.

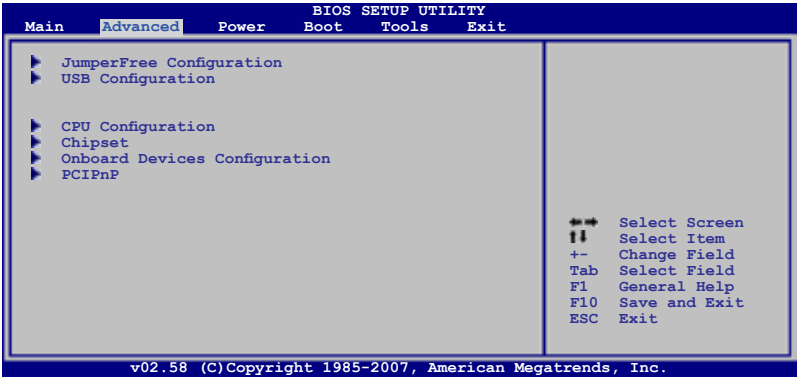
System Memory

Displays the auto-detected system memory.

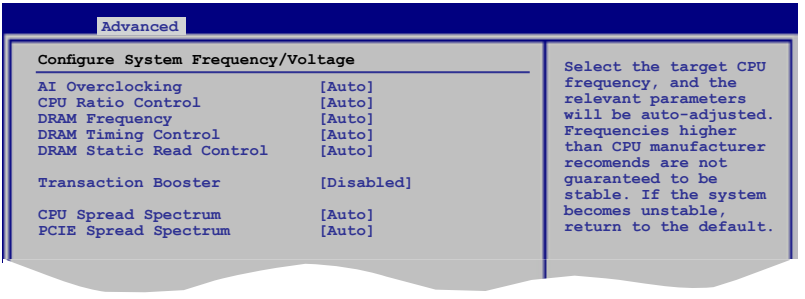
5.4 Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.



5.4.1 Jumperfree Configuration


Advanced
Configure System Frequency/Voltage
AI Overclocking [Auto]
CPU Ratio Control [Auto]
DRAM Frequency [Auto]
DRAM Timing Control [Auto]
DRAM Static Read Control [Auto]
Transaction Booster [Disabled]
CPU Spread Spectrum [Auto]
PCIE Spread Spectrum [Auto]
Select the target CPU frequency, and the relevant parameters will be auto-adjusted. Frequencies higher than CPU manufacturer recomends are not guaranteed to be stable. If the system becomes unstable, return to the default.

AI Overclocking [Auto]

Allows selection of CPU overclocking options to achieve desired CPU internal frequency. Select any one of the preset overclocking configuration options:

Manual	Allows you to individually set overclocking parameters.
Auto	Loads the optimal settings for the system.
Standard	Loads the standard settings for the system.

Some of the following items appear when you set **AI Overclocking** to [Manual].

CPU Ratio Control [Auto]

Configuration options: [Auto] [Manual]

The following item appears when the **CPU Ratio Control** item is set to [Manual].

Ratio CMOS Setting [12]

Use the <+> and <-> keys to select the CMOS ratio values from 6 to 12.

FSB Frequency [XXX]

Displays the frequency sent by the clock generator to the system bus and PCI bus. Use the <+> and <-> keys to adjust the FSB frequency. You can also type the desired FSB frequency using the numeric keypad. The values range from 200 to 800. Refer to the table below for the correct Front Side Bus and CPU External Frequency settings.

FSB/CPU External Frequency Synchronization

Front Side Bus	CPU External Frequency
FSB 1333	333 MHz
FSB 1066	266 MHz
FSB 800	200 MHz

PCIE Frequency [Auto]

Allows you to set the PCI Express frequency.
Configuration options: [Auto] [100] [101]~[149] [150].

DRAM Frequency [Auto]

Allows you to set the DDR2 operating frequency.
Configuration options: [Auto] [DDR2-667MHz] [DDR2-800MHz] [DDR2-1066MHz]

Selecting a very high DRAM frequency may cause the system to become unstable! If this happens, revert to the default setting.

DRAM Timing Control [Auto]

Allows you to set the DRAM timing control. Configuration options: [Auto] [Manual]

The following items appear when you set the **DRAM Timing Control** item to [Manual].

CAS# Latency [5]
Configuration options: [3] [4] [5] [6]

RAS# to CAS# Delay [5 DRAM Clocks]
Configuration options: [3 DRAM Clocks] [4 DRAM Clocks]~[9 DRAM Clocks] [10 DRAM Clocks]

RAS# Precharge [5 DRAM Clocks]
Configuration options: [3 DRAM Clocks] [4 DRAM Clocks]~[9 DRAM Clocks] [10 DRAM Clocks]

RAS# Activate to Precharge [9 DRAM Clocks]
Configuration options: [3 DRAM Clocks] [4 DRAM Clocks]~[33 DRAM Clocks] [34 DRAM Clocks]

TWR [Auto]
Configuration options: [Auto] [1 DRAM Clocks]~[15 DRAM Clocks]

TRFC [Auto]
Configuration options: [Auto] [20 DRAM Clocks] [25 DRAM Clocks] [30 DRAM Clocks] [35 DRAM Clocks] [42 DRAM Clocks]

TWTR [Auto]
Configuration options: [Auto] [1 DRAM Clocks]~[15 DRAM Clocks]

TRRD [Auto]
Configuration options: [Auto] [1 DRAM Clocks]~[15 DRAM Clocks]

TRTP [Auto]
Configuration options: [Auto] [1 DRAM Clocks]~[15 DRAM Clocks]

DRAM Static Read Control [Auto]

Configuration options: [Auto] [Disabled] [Enabled]

Transaction Booster [Disabled]

Configuration options: [Auto] [Disabled] [Enabled]

CPU Spread Spectrum [Auto]

Allows you to enable or disable the CPU spread spectrum.
Configuration options: [Auto] [Disabled]

PCIE Spread Spectrum [Auto]

Allows you to enable or disable the PCIE spread spectrum.
Configuration options: [Auto] [Disabled]

CPU Voltage [Auto]

Allows you to select the CPU voltage. Configuration options: [Auto] [1.6000V] [1.5875V] [1.5750V] [1.5625V] [1.5500V] [1.5375V] [1.5250V] [1.5125V] [1.5000V] [1.4875V] [1.4750V] [1.4625V] [1.4500V] [1.4375V] [1.4250V] [1.4125V] [1.4000V] [1.3875V] [1.3750V] [1.3625V] [1.3500V] [1.3375V] [1.3250V] [1.3125V] [1.3000V] [1.2875V] [1.2750V] [1.2625V] [1.2500V] [1.2375V] [1.2250V] [1.2125V] [1.2000V] [1.1875V] [1.1750V] [1.1625V] [1.1500V]

Refer to the CPU documentation before setting the CPU voltage. Setting a high voltage may damage the CPU!

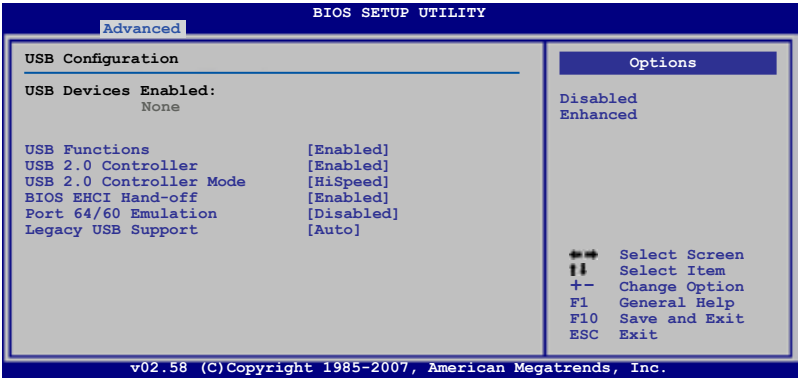
DRAM Voltage [Auto]

Allows you to select the DDR2 reference voltage.
Configuration options: [Auto] [1.80V] [1.90V] [2.00V] [2.10V]

Refer to the DDR2 documentation before adjusting the memory voltage. Setting a very high memory voltage may damage the memory module(s)!

5.4.2 USB Configuration

The items in this menu allows you to change the USB-related features. Select an item then press <Enter> to display the configuration options.



The **USB Devices Enabled** item shows auto-detected values. If no USB device is detected, the item shows **None**.

USB Functions [Enabled]

Allows you to enable or disable the USB functions. The following sub-items appear when this item is set to [Enabled]. Configuration options: [Disabled] [Enabled]

USB 2.0 Controller [Enabled]

Allows you to enable or disable the USB 2.0 controller.
Configuration options: [Enabled] [Disabled]

USB 2.0 Controller Mode [HiSpeed]

Allows you to set the USB 2.0 controller mode to HiSpeed (480 Mbps) or FullSpeed (12 Mbps). This item appears only when you enable the USB 2.0 Controller item. Configuration options: [FullSpeed] [HiSpeed]

BIOS EHCI Hand-off [Enabled]

Allows you to enable support for operating systems without an EHCI hand-off feature. Configuration options: [Disabled] [Enabled]

Port 64/60 Emulation [Disabled]

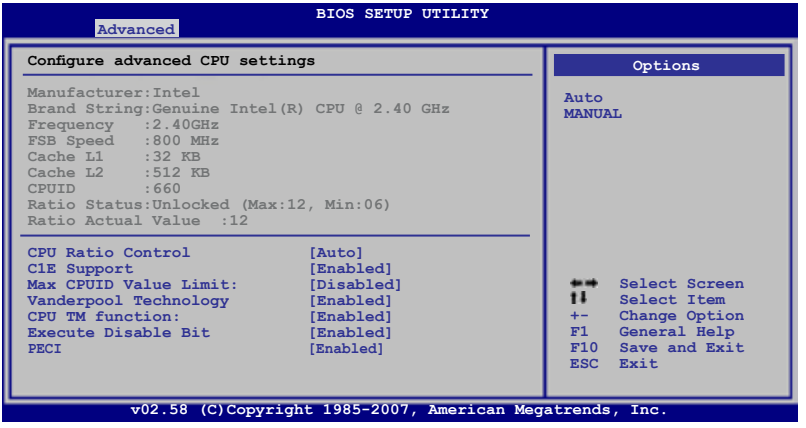
Allows you to enable or disable the I/O port 60h/64h emulation support. This item should be enabled for the complete USB keyboard legacy support for non-USB aware OSes. Configuration options: [Disabled] [Enabled]

Legacy USB Support [Auto]

Allows you to enable or disable support for legacy USB devices. Setting to [Auto] allows the system to detect the presence of USB devices at startup. If detected, the USB controller legacy mode is enabled. If no USB device is detected, the legacy USB support is disabled. Configuration options: [Disabled] [Enabled] [Auto]

5.4.3 CPU Configuration

The items in this menu show the CPU-related information that the BIOS automatically detects.



CPU Ratio Control [Auto]

Configuration options: [Auto] [Manual]

The following item appears when the item **CPU Ratio Control** is set to [Manual].

Ratio CMOS Setting: [12]

Use the <+> and <-> keys to select the CMOS ratio values from 6 to 12.

C1E Support [Enabled]

Allows you to enable or disable C1E Support.
Configuration options: [Disabled] [Enabled]

Max CPUID Value Limit [Disabled]

Setting this item to [Enabled] allows legacy operating systems to boot even without support for CPUs with extended CPUID functions.
Configuration options: [Disabled] [Enabled]

Vanderpool Technology [Enabled]

Configuration options: [Enabled] [Disabled]

CPU TM Function [Enabled]

Configuration options: [Disabled] [Enabled]

Execute Disable Bit [Enabled]

Allows you to enable or disable the No-Execution Page Protection Technology. Setting this item to [Disabled] forces the XD feature flag to always return to zero (0). Configuration options: [Disabled] [Enabled]

PECI [Enabled]

Allows you to enable or disable the PECI interface.
Configuration options: [Disabled] [Enabled]

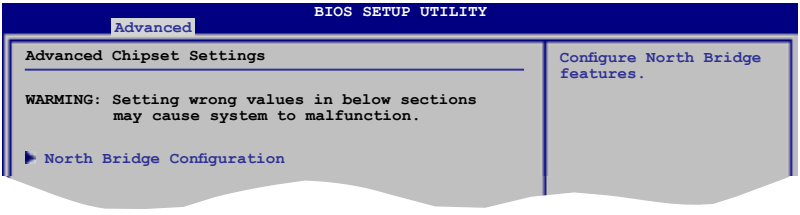
The following item appears when you set **CPU Ratio Control** to [Auto]

Intel(R) SpeedStep (TM) Tech. [Enabled]

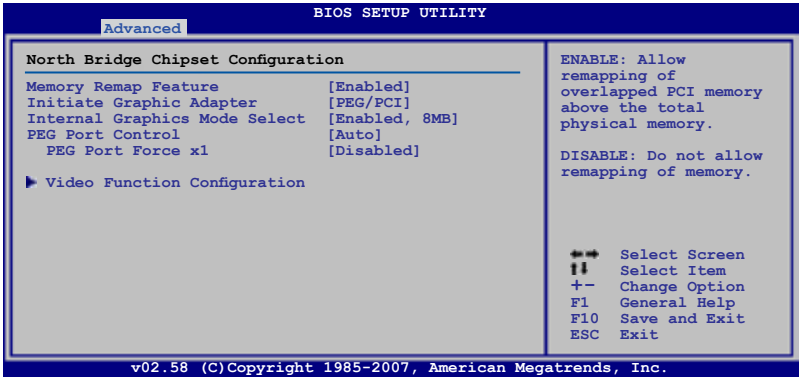
Configuration options: [Enabled] [Disabled]

5.4.4 Chipset

The Chipset menu allows you to change the advanced chipset settings. Select an item then press <Enter> to display the sub-menu.



North Bridge Configuration


BIOS SETUP UTILITY
Advanced
North Bridge Chipset Configuration
Memory Remap Feature [Enabled]
Initiate Graphic Adapter [PEG/PCI]
Internal Graphics Mode Select [Enabled, 8MB]
PEG Port Control [Auto]
PEG Port Force x1 [Disabled]
Video Function Configuration
ENABLE: Allow remapping of overlapped PCI memory above the total physical memory.
DISABLE: Do not allow remapping of memory.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.58 (C)Copyright 1985-2007, American Megatrends, Inc.

Memory Remap Feature [Enabled]

Allows you to enabled or disable the remapping of the overlapped PCI memory above the total physical memory. Enable this option only when you install 64-bit operating system. Configuration options: [Disabled] [Enabled]

Initiate Graphic Adapter [PEG/PCI]

Allows you to decide which graphics controller to use as the primary boot device. Configuration options: [IGD] [PCI/IGD] [PCI/PEG] [PEG/IGD] [PEG/PCI]

Internal Graphics Mode Select [Enabled, 8MB]

Allows you to decide whether to use the internal graphics device and select the amount of memory used by the device.
Configuration options: [Disabled] [Enabled, 1MB] [Enabled, 8MB]

Set this item to [Disabled] if you intend to install a PCIE x16 graphics card to the PCIE x16 slot.

PEG Port Control [Auto]

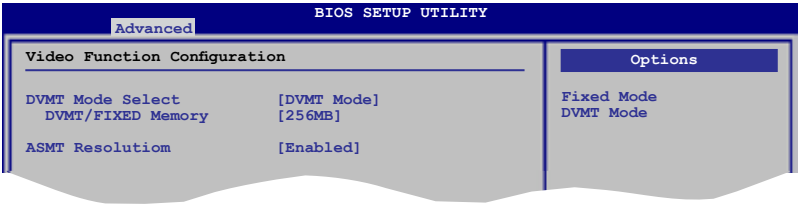
Configuration options: [Auto] [Disabled]

PEG Force x1 [Disabled]

This item appears when the PEG Port Control item is set to [Auto].
Configuration options: [Enabled] [Disabled]

The following item appears when the **Internal Graphics Mode Select** item is set to [Enabled, 1MB] or [Enabled, 8MB].

Video Function Configuration



DVMT Mode Select [DVMT Mode]

Configuration options: [Fixed Mode] [DVMT Mode]

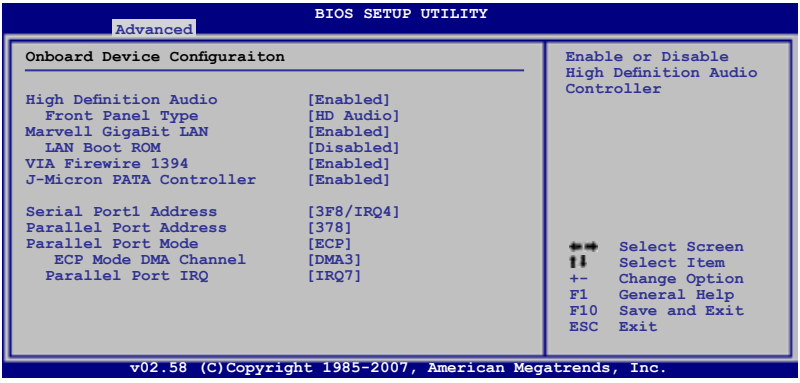
DVMT/FIXED Memory [256MB]

Configuration options: [128MB] [256MB]

ASMT Resolution [Enabled]

Configuration options: [Disabled] [Enabled]

5.4.5 OnBoard Devices Configuration



High Definition Audio [Enabled]

Allows you to enable or disable the High Definition Audio. The following item appears only when you enable this item.
Configuration options: [Enabled] [Disabled]

Front Panel Type [HD Audio]

Allows you to set the front panel audio connector (AAFP) mode to legacy AC'97 or high-definition audio depending on the audio standard that the front panel audio module supports. Configuration options: [AC97] [HD Audio]

Marvell GigaBit LAN [Enabled]

Configuration options: [Enabled] [Disabled]

LAN Boot ROM [Disabled]

This item appears only when you enable the previous item.
Configuration options: [Disabled] [Enabled]

VIA Firewire1394 [Enabled]

Allows you to disable or enable the onboard 1394 device support.
Configuration options: [Enabled] [Disabled]

J-Micron PATA Controller [Enabled]

Allows you to enable or disable the JMicron® PATA controller.
Configuration options: [Enabled] [Disabled]

Serial Port1 Address [3F8/IRQ4]

Allows you to select the Serial Port1 base address.
Configuration options: [Disabled] [3F8/IRQ4] [2F8/IRQ3] [3E8/IRQ4] [2E8/IRQ3]

Parallel Port Address [378]

Allows you to select the Parallel Port base addresses.
Configuration options: [Disabled] [378] [278] [3BC]

Parallel Port Mode [ECP]

Allows you to select the Parallel Port mode.
Configuration options: [Normal] [Bi-Directional] [EPP] [ECP]

ECP Mode DMA Channel [DMA3]

Appears only when the Parallel Port Mode item is set to [ECP]. This item allows you to set the parallel port ECP DMA.
Configuration options: [DMA0] [DMA1] [DMA3]

EPP Version [1.9]

Appears only when the Parallel Port Mode item is set to [EPP]. This item allows you to select the parallel port EPP version.
Configuration options: [1.9] [1.7]

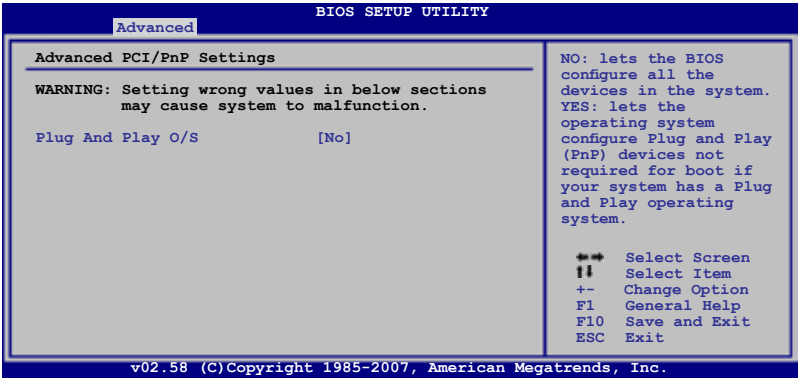
Parallel Port IRQ [IRQ7]

Configuration options: [IRQ5] [IRQ7]

5.4.6 PCIPnP

The PCI PnP menu items allow you to change the advanced settings for PCI/PnP devices.

Take caution when changing the settings of the PCI PnP menu items. Incorrect field values can cause the system to malfunction.


BIOS SETUP UTILITY
Advanced
Advanced PCI/PnP Settings
WARNING: Setting wrong values in below sections may cause system to malfunction.
Plug And Play O/S [No]
NO: lets the BIOS configure all the devices in the system. YES: lets the operating system configure Plug and Play (PnP) devices not required for boot if your system has a Plug and Play operating system.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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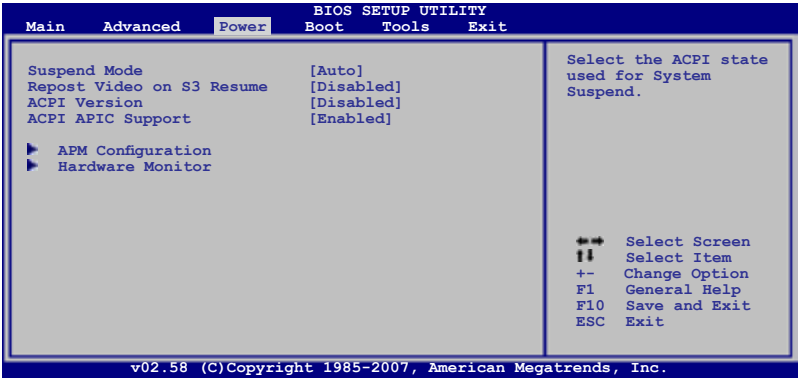
Plug And Play O/S [No]

When set to [No], BIOS configures all the devices in the system. When set to [Yes] and if you install a Plug and Play operating system, the operating system configures the Plug and Play devices not required for boot.
Configuration options: [No] [Yes]

5.5 Power menu

The Power menu items allow you to change the settings for the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.



5.5.1 Suspend Mode [Auto]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend.
Configuration options: [S1 (POS) Only] [S3 Only] [Auto]

5.5.2 Repost Video on S3 Resume [Disabled]

Determines whether to invoke VGA BIOS POST on S3/STR resume.
Configuration options: [Disabled] [Enabled]

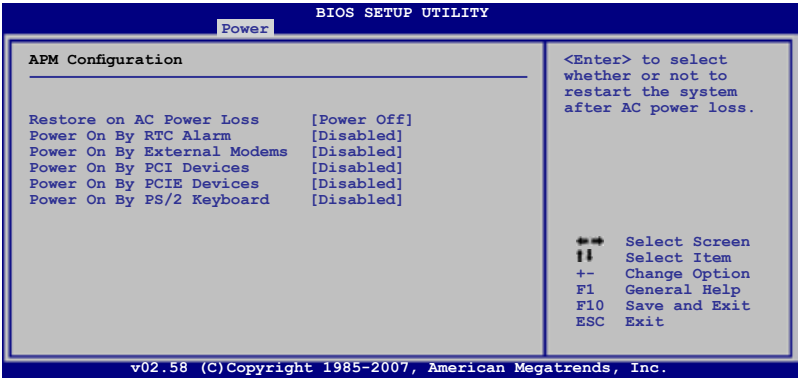
5.5.3 ACPI Version [Disabled]

Allows you to select the Advanced Configuration and Power Interface (ACPI) version supported. Configuration options: [Disabled] [Enabled]

5.5.4 ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Advanced Programmable Interrupt Controller (APIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list.
Configuration options: [Disabled] [Enabled]

5.5.5 APM Configuration


BIOS SETUP UTILITY
Power
APM Configuration
Restore on AC Power Loss [Power Off]
Power On By RTC Alarm [Disabled]
Power On By External Modems [Disabled]
Power On By PCI Devices [Disabled]
Power On By PCIE Devices [Disabled]
Power On By PS/2 Keyboard [Disabled]
<Enter> to select whether or not to restart the system after AC power loss.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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Restore On AC Power Loss [Power Off]

When set to Power Off, the system goes into off state after an AC power loss. When set to Power On, the system goes on after an AC power loss. When set to Last State, the system goes into either off or on state, whatever the system state was before the AC power loss.
Configuration options: [Power Off] [Power On] [Last State]

Power On By RTC Alarm [Disabled]

Allows you to enable or disable RTC to generate a wake event. When this item is set to Enabled, the items RTC Alarm Date/ RTC Alarm Hour/ RTC Alarm Minute/ RTC Alarm Second will become user-configurable with set values.
Configuration options: [Disabled] [Enabled]

Power On By External Modems [Disabled]

This allows either settings of [Enabled] or [Disabled] for powering up the computer when the external modem receives a call while the computer is in Soft-off mode.
Configuration options: [Disabled] [Enabled]

The computer cannot receive or transmit data until the computer and applications are fully running. Thus, connection cannot be made on the first try. Turning an external modem off and then back on while the computer is off causes an initialization string that turns the system power on.

Power On By PCI Devices [Disabled]

Allows you to enable or disable the PME to wake up from S5 by PCI devices.
Configuration options: [Disabled] [Enabled]

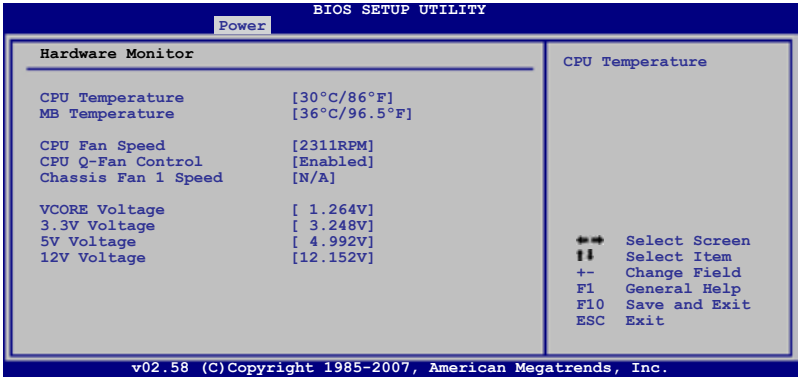
Power On By PCIE Devices [Disabled]

Allows you to enable or disable the PCIE devices to generate a wake event.
Configuration options: [Disabled] [Enabled]

Power On By PS/2 Keyboard [Disabled]

Allows you to disable the Power On by PS/2 keyboard function or set specific keys on the PS/2 keyboard to turn on the system. This feature requires an ATX power supply that provides at least 1A on the +5VSB lead.
Configuration options: [Disabled] [Space Bar] [Ctrl-Esc] [Power Key]

5.5.6 Hardware Monitor



CPU Temperature [xxx°C/xxx°F]
MB Temperature [xxx°C/xxx°F]

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. Select [Ignored] if you do not wish to display the detected temperatures.

CPU Fan Speed [xxxxRPM] or [Ignored] / [N/A]

The onboard hardware monitor automatically detects and displays the CPU fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows N/A.

CPU Q-Fan Control [Enabled]

Allows you to enable or disable the CPU Q-Fan controller.
Configuration options: [Disabled] [Enabled]

Chassis Fan 1 Speed [xxxxRPM] or [Ignored] / [N/A]

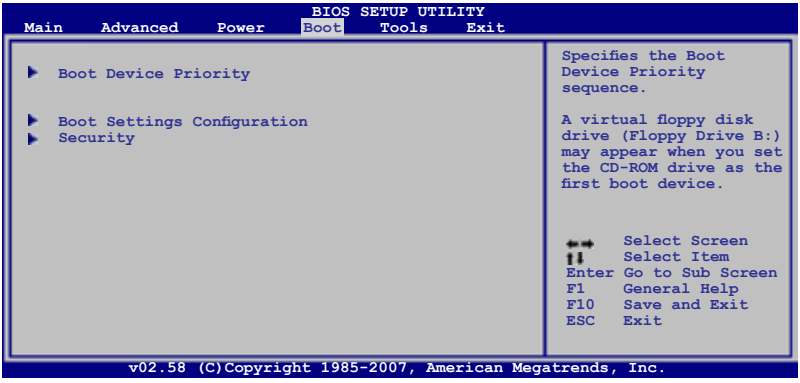
The onboard hardware monitor automatically detects and displays the chassis fan speed in rotations per minute (RPM). If the fan is not connected to the motherboard, the field shows N/A.

Vcore Voltage, 3.3V Voltage, 5V Voltage, 12V Voltage

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Select [Ignored] if you do not want to detect this item.

5.6 Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.


BIOS SETUP UTILITY
Main Advanced Power Boot Tools Exit
Boot Device Priority
Boot Settings Configuration
Security
Specifies the Boot Device Priority sequence.
A virtual floppy disk drive (Floppy Drive B:) may appear when you set the CD-ROM drive as the first boot device.
Select Screen
Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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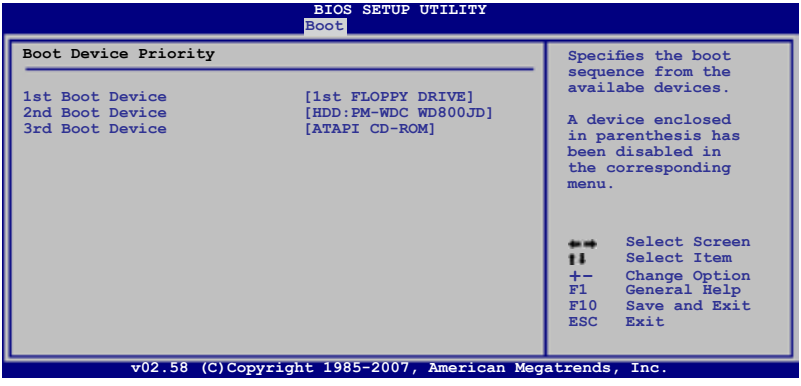
5.6.1 Boot Device Priority


BIOS SETUP UTILITY
Boot
Boot Device Priority
1st Boot Device [1st FLOPPY DRIVE]
2nd Boot Device [HDD:PM-WDC WD800JD]
3rd Boot Device [ATAPI CD-ROM]
Specifies the boot sequence from the availabe devices.
A device enclosed in parenthesis has been disabled in the corresponding menu.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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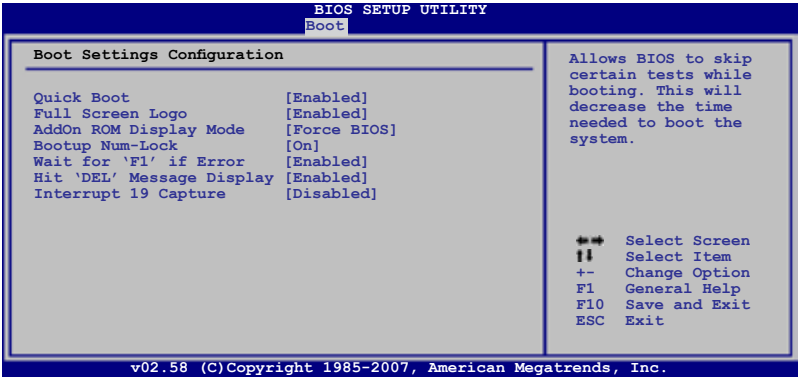
1st ~ xxth Boot Device [xxx Drive]

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.
Configuration options: [xxx Drive] [Disabled]

5.6.2 Boot Settings Configuration


BIOS SETUP UTILITY
Boot
Boot Settings Configuration
Quick Boot [Enabled]
Full Screen Logo [Enabled]
AddOn ROM Display Mode [Force BIOS]
Bootup Num-Lock [On]
Wait for 'F1' if Error [Enabled]
Hit 'DEL' Message Display [Enabled]
Interrupt 19 Capture [Disabled]
Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
Select Screen
Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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Quick Boot [Enabled]

Enabling this item allows the BIOS to skip some power on self tests (POST) while booting to decrease the time needed to boot the system. When set to [Disabled], BIOS performs all the POST items.
Configuration options: [Disabled] [Enabled]

Full Screen Logo [Enabled]

This allows you to enable or disable the full screen logo display feature.
Configuration options: [Disabled] [Enabled]

Set this item to [Enabled] to use the ASUS MyLogo2™ feature.

AddOn ROM Display Mode [Force BIOS]

Sets the display mode for option ROM.
Configuration options: [Force BIOS] [Keep Current]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock.
Configuration options: [Off] [On]

Wait for 'F1' If Error [Enabled]

When set to Enabled, the system waits for the F1 key to be pressed when error occurs. Configuration options: [Disabled] [Enabled]

Hit 'DEL' Message Display [Enabled]

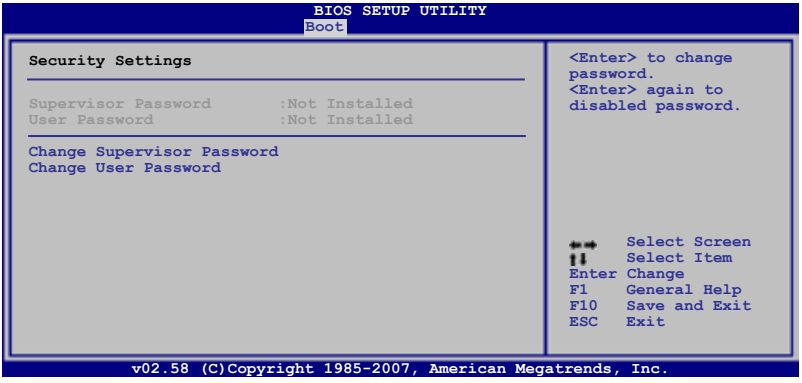
When set to Enabled, the system displays the message "Press DEL to run Setup" during POST. Configuration options: [Disabled] [Enabled]

Interrupt 19 Capture [Disabled]

When set to [Enabled], this function allows the option ROMs to trap Interrupt 19.
Configuration options: [Disabled] [Enabled]

5.6.3 Security

The Security menu items allow you to change the system security settings. Select an item then press <Enter> to display the configuration options.



Change Supervisor Password

Select this item to set or change the supervisor password. The Supervisor Password item on top of the screen shows the default Not Installed. After you set a password, this item shows Installed.

To set a Supervisor Password:

1. Select the Change Supervisor Password item and press <Enter>.
2. From the password box, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

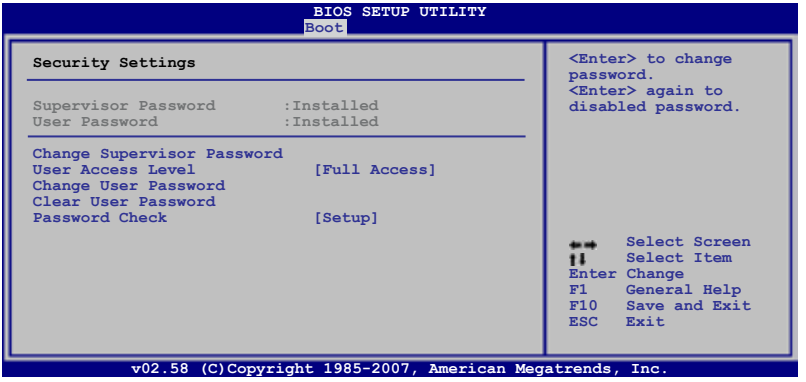
The message “Password Installed” appears after you successfully set your password.

To change the supervisor password, follow the same steps as in setting a user password.

To clear the supervisor password, select the Change Supervisor Password then press <Enter>. The message “Password Uninstalled” appears.

If you forget your BIOS password, you can clear it by erasing the CMOS Real Time Clock (RTC) RAM. See section **2.6 Jumper** for information on how to erase the RTC RAM.

After you have set a supervisor password, the other items appear to allow you to change other security settings.



User Access Level [Full Access]

This item allows you to select the access restriction to the Setup items.
Configuration options: [No Access] [View Only] [Limited] [Full Access]

No Access prevents user access to the Setup utility.

View Only allows access but does not allow change to any field.

Limited allows changes only to selected fields, such as Date and Time.

Full Access allows viewing and changing all the fields in the Setup utility.

Change User Password

Select this item to set or change the user password. The User Password item on top of the screen shows the default Not Installed. After you set a password, this item shows Installed.

To set a User Password:

1. Select the Change User Password item and press <Enter>.
2. On the password box that appears, type a password composed of at least six letters and/or numbers, then press <Enter>.
3. Confirm the password when prompted.

The message “Password Installed” appears after you set your password successfully.

To change the user password, follow the same steps as in setting a user password.

Clear User Password

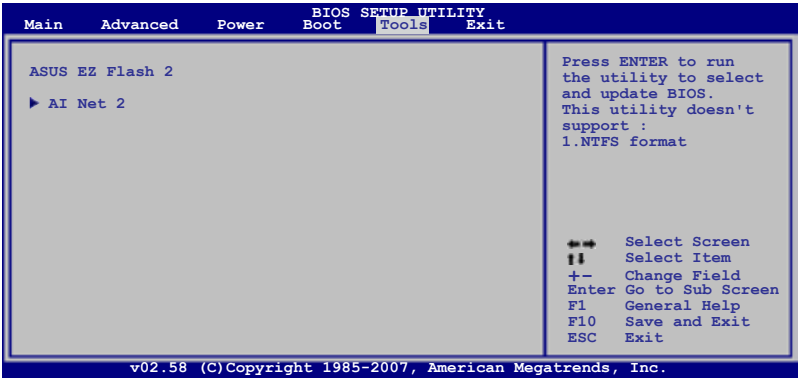
Select this item to clear the user password.

Password Check [Setup]

When set to [Setup], BIOS checks for user password when accessing the Setup utility. When set to [Always], BIOS checks for user password both when accessing Setup and booting the system.
Configuration options: [Setup] [Always]

5.7 Tools menu

The Tools menu items allow you to configure options for special functions. Select an item then press <Enter> to display the sub-menu.


BIOS SETUP UTILITY
Main Advanced Power Boot Tools Exit
ASUS EZ Flash 2
AI Net 2
Press ENTER to run the utility to select and update BIOS. This utility doesn't support : 1.NTFS format
Select Screen
Select Item
+- Change Field
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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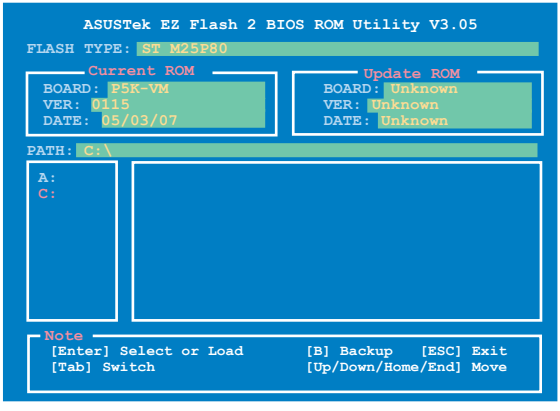
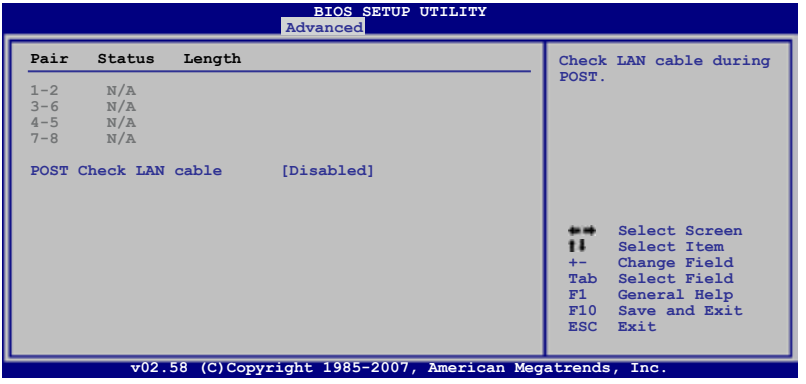
5.7.1 ASUS EZ Flash 2

Allows you to run ASUS EZ Flash 2. When you press <Enter>, a confirmation message appears. Use the left/right arrow key to select between [Yes] or [No], then press <Enter> to confirm your choice. Please see section 2.1.3 for details.



5.7.2 AI Net 2

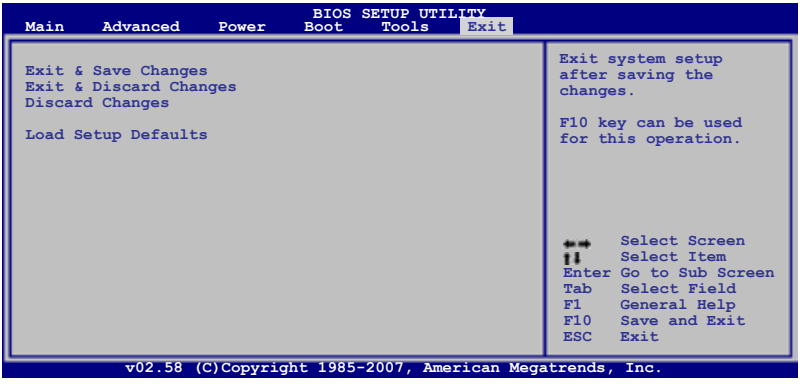


POST Check LAN Cable [Disabled]

Enables or disables checking of the LAN cable during the Power-On Self-Test (POST). Configuration options: [Disabled] [Enabled]

5.8 Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.


BIOS SETUP UTILITY
Main Advanced Power Boot Tools Exit
Exit & Save Changes
Exit & Discard Changes
Discard Changes
Load Setup Defaults
Exit system setup after saving the changes.
F10 key can be used for this operation.
Select Screen
Select Item
Enter Go to Sub Screen
Tab Select Field
F1 General Help
F10 Save and Exit
ESC Exit
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Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select YES to save changes and exit.

If you attempt to exit the Setup program without saving your changes, the program prompts you with a message asking if you want to save your changes before exiting. Press <Enter> to save the changes while exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select YES to discard any changes and load the previously saved values.

Load Setup Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select YES to load default values. Select Exit & Save Changes or make other changes before saving the values to the non-volatile RAM.